# Task Force on Labour Relations

## Study No. 16

## A study of the effects of the $1.25 minimum wage under the Canada Labour (Standards) Code

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**TASK FORCE ON LABOUR RELATIONS**

(under the Privy Council Office)

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BY

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OTTAWA

MARCH 1970

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The studies of the Task Force on Labour Relations
represent some of the research carried out under
contract. The Task Force members do not necessarily
agree with the observations and opinions expressed
in these studies.

# PREFACE

A preface provides an author with an opportunity to say to the reader, among other things, something about the nature of his work and the limits and boundaries of the work. I shall begin with some incidental information of a background nature.

As originally outlined to me by the Task Force of Labour Relations the purpose of this study was (1) to provide an extensive library research, reviewing and summarizing legal, theoretical and empirical literature on minimum wage controversy in chronological order; (2) to undertake an empirical analysis of the available Canadian data in the hope of elucidating the subject with some quantitative knowledge about the possible effects of the new law of $1.25 minimum wage under the Canada Labour (Standards) Code on such variables as employment, wages and costs; and (3) to present the material in such a way that it could be used by the layman working for unions companies and government as a reference work. An effort has been made in this study to meet these objectives under constraint of time allowed for the study, the nature of the available data and the kind of industries covered under the Labour Standard Code.

The study began in November, 1967, and a completed first draft was asked for by October 15, 1908. In the intervening months nearly nine months were spent on transforming the data from the Special Wage Surveys carried out by the Canada Department of Labour in 1965 and 1966 into the form in which it could be susceptible to empirical analysis. The remaining time was spent in carrying out the necessary computations and in writing out the results.

All of the data used in this Study are official statistics and were supplied either by the Canada Department of Labour or the Dominion Bureau of Statistics. As far as statistics are concerned, it is necessary to point out that the available data leave much to be desired. For example, the response to the two Special Wage Surveys conducted by the Canada Department of Labour in 1965 and 1966 was voluntary. Consequently, out of some 4,573 forms sent to an identical number of firms only about 54% were returned in 1965. A similar response pattern evolved for 1966. Since we wanted to determine the response of firms to the implementation of the minimum wage law, we decided to study only firms who had returned the questionnaire in both 1965 and 1966. As a result, merely 1,511 firms satisfied this requirement. It will be apparent that the large number of rejections of question-naires and the sizeable non-response introduced features which may well have distorted some of the findings in Chapter IV. Another characteristic of the collection of data was that it restricted itself to individuals whose earnings were up to $2.50/hr. As a result, the frequency distribution of earnings in excess of $2.50/hr. was not available.

It should also be pointed out that 1) the value-added figures for most of the industries covered under the Minimum Wage Law were not available; 2) a large portion of our sample consisted of relatively high-wage and unionized industries whereas the previous studies on the minimum wage have generally dealt with low-wage and non-unionized industries. Furthermore, no special surveys were made of underlined firms. We considered using 'firms under deferment' as a proxy for examining the behavior of uncovered firms but, unfortunately, comparable information on deferred firms was not readily available to us. In any case, firms falling in the deferment category were few in number and, therefore, might not have added much to the analysis.

Finally, the Canadian economy was experiencing a 'Great Expansion', to use the words of the Economic Council of Canada, which had its beginning in 1961. Unemployment, both in terms of the number of workers out of work and in percentages, had reached a low level by mid-1965, the time of the minimum wage enactment. The buoyant state of the economy gradually brought about an increasing rate of price increases which would moderate and partially wipe out the impact of the minimum wage, particularly on low-wage employers. In view of the problems described above, it is suggested that the findings reported below be interpreted with caution.

The preparation of a study of this kind generally involves accumulation of many obligations. This study is no exception. In the course of preparing this manuscript, several individuals were helpful in various ways and it is a pleasure to record their contributions to the Study. Mr. Phillip Cohen of Federal Industries Division and three members of his staff, Mr. A. Hasan, Mr. B. Myhal and Dr. M. A. Malik, not only provided the basic data

## POSTSCRIPT

This study is essentially the same as the first draft submitted to the Task Force on Labour Relations on October 15, 1968. The only changes  made are in the form of reducing the size of the manuscript and  taking  account of comments made on the original draft. I would like to  thank  Mr. H. A. Wilson who was left with the responsibility of winding up the work  of  the Task Force for supervising the details associated with  the  publication of this study.

Mahmood A. Zaidi

March 20, 1970
Minneapolis, Minnesota

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# CHAPTER I

## THE ECONOMICS OF MINIMUM WAGE LEGISLATION

Discussion of minimum wage legislation in the early 20th Century was carried out within the framework of Fabian social philosophy. That is, government intervention was called for as a countervailing force against capitalist exploitation and social injustice. Debate along these lines persisted until the 1930's and early 1940's when neo-classical analysis sharpened the theoretical issues. Since then, most of the controversy has centered on the applicability of neo-classical (marginal) analysis and the incorporation of macroeconomic and dynamic factors into the theoretical model. In this chapter we trace the historical development of the economics of minimum wage legislation and present the major current theoretical issues.

The method of organization is to consider important authors in chrono-logical order. In this way it will be possible to more closely follow the development of the issue and to notice the different tools of analysis brought to bear. For this reason various aspects of the minimum wage issue will recur throughout the chapter.

## 1.1 EARLY DEBATES

H. B. Lees-Smith examined the possible impact of a legal minimum wage according to classical economic theory. 1/ He first examined the possible economic conditions which would lead the employer to pay a higher wage, after a minimum is instituted: (1) a fall in the wages of the more highly skilled workers; (2) increases in the price of the product; and (3) a decline in profits.

He discounted the first by saying that due to the higher demand for skilled workers in relation to unskilled after the minimum, their wage rate would increase rather than decrease.

A price rise would "decrease demand" for the product, which would decrease the amounts of the various resources employed in producing it. The exact amount, he claimed, depended on the elasticity of demand for the final product. The greater the elasticity, the greater the amount.

A forced reduction of profits would have the same effect on factors of production as an increase in price. By diverting investment from the industry so as to "decrease the supply of the commodities produced," the demand for labor would also be decreased. These resources will seek employment in industries where their "net product and remuneration are higher." Where the minimum (subsistence) wage is universal, these effects may be more emphatic, especially in regard to employment. If workers released from one industry cannot find work below the minimum in another, they become unemployed.

Lees-Smith then discussed the problem of less-than-subsistence income and the "parasitic" trades -- trades which gain advantage in a manner

analogous to a "bounty" by hiring workers at less than subsistence rates.
He believed that the minimum wage was an effective way of denying  this
bounty.  However, the existence of a sub-minimum wage did not necessarily
imply a "parasitic" trade, for Lees-Smith noted that "the wage depends on
the net product of labour.  When the wage is below subsistence the Labour-
ers' net product is correspondingly low." 2/

The substitution of machinery for low-skilled labor, he asserted,
although increasing national income and the demand for labor in the long-
run, would not aid the low-paid workers much since his share of the increased
demand would be quite small.  Therefore, unless the elasticity of demand
for the product of the new machinery was quite high, the major impact of
the change fell on the worker.  It was Lees-Smith's conclusion that the
employment effect of the minimum wage would be considerable.

Sidney Webb's analysis of the effects of the 1896 minimum wage law in
Victoria tended to refute some of the alleged adverse effects of minimum
wages. 3/

Webb found the fears of marginal firms being eliminated,  employment
restricted, capital driven away and older workers cruelly eliminated from
the labor force to be unrealistic.  The Australian experience after a min-
imum wage law was that, not only did wages rise from 12 to 55 per cent,
but hours were reduced and the employment/population ratio increased.
Since coverage was extended to workers in a large number of trades and
through periods of depression as well as boom, the individual  firm  under
the minimum wage was not affected by competitors that were not  under the
law.  In fact, some employers favored the law as a weapon "against  being
undercut by the dishonesty of disloyal competitors who simply (would) not
adhere to the common rules agreed upon by Collective Bargaining." 4/

Webb found that overworking employees and paying less than subsistence wages were in effect, depleting the natural resources of the economy. In this way, the particular firm was not fully compensating society for the resources that the firm was using. Wages, he lamented, are not determined by the worth of the individual workers but "by the urgent necessities of 'marginal' men." 5/

One point which seemed to be central to Webb's argument was that minimum wages were very much like other minimum standards of work covered under the Factories Act. It was axiomatic to him that an employer, unless regulated, would "make more profit, though less product, out of inefficient workmen than out of good workmen." 6/ A minimum wage makes it unprofitable for employers to hire the more inefficient workers. The employer "is unable to grade the other conditions of employment down to the level of the lowest and most necessitous wage earner in his establishment." 7/ If he were forced to take his standards of productivity as fixed, those unemployed would be the least efficient workers. "Thus, a Legal Minimum Wage positively increases the productivity of the nation's industry." 8/

Productivity would be increased in a second way. Wherever the going rate is insufficient to provide adequate nutrition, rest or surroundings, a minimum wage would have the direct effect of raising the efficiency of labor. Webb also pointed out that a minimum wage positively stimulates the invention and adoption of new processes of manufacture. Capital intensive techniques may prove profitable due to the higher minimum. In fact, he believed the minimum wage had the effect of increasing industry efficiency in that "it tends steadily to drive business into those establishments which are most favorably situated, best equipped and managed with the greatest ability, and to eliminate the incompetent or old-fashioned employer." 9/

Finally, by eliminating women and children from the labor market a minimum wage may have desirable social effects. Women would be able to better care for their children and by keeping the children in schools the ultimate quality of the labor force would be enhanced. Webb, on the basis of his theoretical reasoning, felt that the minimum wage would not have adverse employment effects since the demand for many goods was inelastic; employers could raise the product price to meet wage costs without curtailing employment severely.

Florence Kelly pointed out some interesting aspects of price-wage relationships, although she was primarily concerned with the legislative aspects of minimum wage laws. 10/ For instance, she claimed that prices are often fixed at high levels by the trusts so that increases in wage rates need not necessarily lead to increased prices. She further pointed out that labor costs are only a part of the total cost, so wage increases may have only a minor effect on the price of the product. Finally, she noted that there exists a range of wage rates amongst firms in the same industry. Presuming the prices of the final product to be the same, she deduced that the absolute level of wages may not be a critical variable.

Rossignol discussed some of the general economic aspects of minimum wage legislation. 11/ He disputed the Webb idea that regulation of wage standards is analogous to other minimum standards legislations. The difference, he claimed, is that minimum wages directly affect employment by their higher costs, whereas costs from other labor standards legislation can be met by reducing the wage rate and keeping employment at the previous level. Only when a minimum wage results in a proportional increase in efficiency would there be no employment effect. The extent of the employment effect depends on the elasticities of the supply and demand curves for labor.

Rossignol noted that it has been difficult to separate the employment effects of a minimum wage from other economic conditions such as cyclical trends. Yet he discovered that a 1914 Washington law, passed during a depressed period, did not reduce employment as might be predicted.

Thus he **surmised** that although the general direction predicted by economic theory was correct, the extent is less than would be expected. This may be explained by the hypothesis that actual wages lag behind "normal" wages, at least in times of rising prices, so that the minimum wage law is the government's attempt to award labor its full market value.

Alternatively, the small employment effect may be due to the fact that the demand for labor is quite often inelastic. Secondly, the fact that increases have been moderate and have taken place in times of expanding trade and rising prices also has a large mitigating influence on employment cuts. Finally, the minimum wage may act as a stimulus toward greater efficiency on the part of both employers and employees. Labor-saving equipment and other cost reducing devices may be introduced as a result.

Filene contended that the real reason for the so-called inability to pay a living wage is inefficient management practices. 12/ He believed that it was inefficient to hire low productivity workers at a low wage since, as Henry Ford demonstrated, higher wages lead to higher productivity and profit.

Filene asserted that the minimum wage benefits the responsible employer since he knows exploitive competitors cannot undercut him by paying at less than subsistence rates. Higher wages also benefit the entire community since they tend to raise consumption and, consequently, the demand for labor.

## 1.2  VARIOUS DEBATES AND CLARIFICATIONS SINCE 1940

Brown set forth some of the issues which he thought were relevant  in judging the effects of the minimum wage.  13/  He was concerned principally with the employment effect.  Unlike most previous writers (he claimed)  he dealt primarily with the economy as a whole, not with the theory of the firm.

There would be positive employment effects, ceteris paribus, due to the increased propensity to consume which results from the new division of income between wage-earners and rentiers.  This may be partially or wholly  offset by decreasing demand caused by increased prices or declining investment (due to the decreased profits).  The exact magnitude of this effect would depend on the size of the wage increase, the state of business and the  number  of firms affected.  Brown's conclusion was that a moderate increase would cause only a small negative employment effect, if any at all.

Mikesell argues that the increased marginal propensity to consume cannot come about unless the ratio of total receipts to aggregate prime  (labor) costs is decreased.  14/  That is, labor's share of national income must be increasing.

Brown replied by saying that this neglects other prime costs and where applied to a competitive model for an overall wage increase it  depends  on the aggregation based on some "typical" firm, all of which is contrary  to his assumptions in the model.

Hagen based his objections on the fact that where the elasticity  of demand for products is less than unity the increased marginal propensity to consume may not occur.  Entrepreneurs might raise prices which would  keep the marginal propensity to consume as before.  Brown answered that  in  an

"imperfect" world a firm did not necessarily react to an increase in its factor costs by raising the price of the product and curtailing output.

Sufrin contended that where the amount of the wage increase is small and affects a small number of persons, the effects on general consumption are likely to be insignificant. Furthermore, the effect of higher wages on indirect investment is likely to be small (as shown by the NRA experience).

Brown conceded the above points and showed that he was aware of the problems of the extent of the repercussions in his original article. He emphasized that his objective was not to show conclusively that the employment effect is positive but merely to counter the dismal consequences of a minimum wage predicted by classical theory.

Ezekiel dealt with the problem of industrial production spurting upward, "only to fall back as sales failed to keep pace with production." 15/ He developed some issues raised by Spurgeon Bell's Brookings Institute Study which maintained that productivity increases are devoured by higher wages and profits rather than being passed on to consumers through lower prices.

The relation of the minimum wage to these issues was dealt with tangentially. However, it may be inferred that if prices were consistently lowered when productivity increased, the minimum wage might be unnecessary.

Mikesell discussed the employment effect of the minimum wage. In particular, he dealt with the positively sloped demand curve for labor. Mikesell wished to show that the positively sloped demand curve for labor is possible under conditions other than those in which plants are operating in a stage of decreasing cost. 16/ He first assumed that the demand curve for labor in the imperfect market is the marginal revenue product curve. After

assuming this, he developed three cases where a positively sloping labor demand may exist: (1) when the slope of the marginal revenue curve and the marginal productivity curve are both positive; (2) when the marginal revenue curve is negatively sloped and the marginal product curve is positively sloped, with the further condition that the demand for the product is not inelastic, and (3) when the marginal revenue curve to the individual firm selling in an imperfect market is positively sloped, in which case the product demand e ~ticity must be increasing rapidly. Yet, Mikesell felt that the employer does not realize when he is in such a situation. Therefore, an increase in wage rates may lead to his keeping the same number of employ-ees or even adding more without the effect of squeezing the profit rate.

Mosak took issue with Mikesell's analysis of the possibility of a positively sloped demand curve for labor. 17/ He first attacked the assumption that the demand curve for labor in an imperfect market is the marginal productivity curve. He argued that in an equilibrium position the marginal revenue product curve cannot be positively sloping. For the demand curve to be positively sloping means that the marginal revenue product curve is not equal to the labor demand curve. Mikesell had forgotten his second order conditions. Mosak lists _his_ possibilities for a positively sloped demand curve: (1) under conditions of monopsonistic market for labor if the new supply of labor to the firm is sufficiently more elastic than the old; (2) if the demand curve for the firm's product is an increasing function of the income of the employees; and (3) if a limited budget is placed on the firm so that labor acts as an inferior productive service, meaning that as wage rates of the firm increase cheap labor is hired because capital equipment is not within the budget constraint.

The traditional argument that higher wages will exceed marginal revenue product thus causing decreasing employment and output is refuted in an article by Martin Bronfenbrenner. 18/ He attempted to provide a rationalization for the thesis of Weir Brown and others who claimed that for low wage groups productivity depends on the wage rate rather than vice versa. He claimed that a wage increase increases purchasing power and the demand for goods with the result that workers can be used more productively. Thus, employment need not be reduced. Secondly, the consequent higher living standards increase the efficiency of labor.

Bronfenbrenner concentrated on the latter reason. Assuming efficiency rises proportionately to wages, unskilled labor costs of production will remain constant. He states,

> As the efficiency of unskilled labor rises, unemployed resources of other types will be hired, at going wage rates, in consequence of increased production. In the absence of what Mr. Keynes and his followers call "bottlenecks", meaning sectors of substantially full employment, all resource prices will remain constant, and there will be no effects on selling taken to constitute incomes, constancy of average costs of production implies concurrent expansion of total income and total output. With total income and total output expanding concurrently, there should be no difficulty in disposing of the increased output at unreduced prices. With physical productivity schedules rising in proportion to wages, and price levels remaining constant, marginal productivity schedules also rise in proportion to wages. The increased wage rates and wage bills can be borne without increased unemployment. 19/

This is shown in Figure 1a as a shift of the marginal value productivity curve from a to b, w' being the minimum wage and w the previous wage level.

FIGURE 1



1a

1b
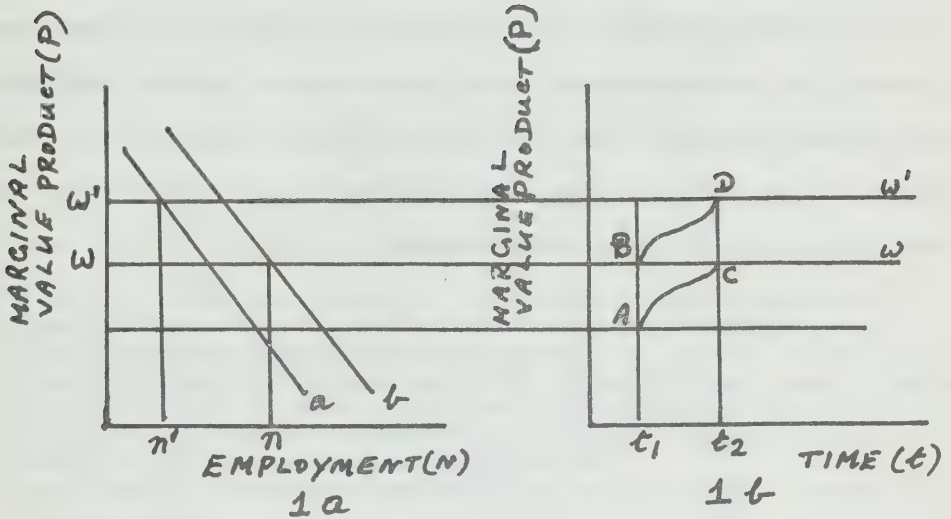
The problem with such an analysis, according to Bronfenbrenner, is that it neglects the dynamic aspects of the relation between the higher wage and the increased efficiency. There will be a lag in efficiency so that there would be temporary unemployment. Figure 1b illustrates this aspect. The vertical (p) axis represents marginal value productivity which, under the above assumptions, is the same as the vertical axis in 1a. The horizontal axis represents time. Thus, at time $t_1$, for instance, it will not pay the employer to retain more than $n^1$ employees, since the shift from a to b in 1a is not instantaneous but changes gradually along the path AC.

Unless employers are willing to take losses, the immediate effect is to create two groups. One group is the unemployed. The retained group's

marginal productivity gradually rises to a point above the minimum since the new marginal productivity curve (b) lies above $w^1$ at the $n^1$ level of employment.

This creates a dilemma for the employer. He would like to employ more workers at the minimum rate but cannot obtain workers with the requisite skills to make this profitable, since the unemployed group has not experienced the higher living standard and consequent higher productivity. The $n - n^1$ workers are likely to remain unemployed.

Only by introducing a system of relief which would raise the unemployed workers' income (and efficiency) above the level of his last employment could the temporary unemployment effect be stopped from becoming permanent. Since this conflicts with social and political considerations, Bronfenbrenner suggested that minimum wages be increased only gradually and that some sort of temporary payroll subsidy be given to employers to enable them to avoid decreasing employment.

Van Sickle, although he supported the principle of a minimum wage, has reservations about the particular provisions of the Fair Labor Standards Act. 20/

(1) "A fair wage is one which provides unskilled workers with a minimum standard of living necessary for health, efficiency and general well-being." 21/ Van Sickle believed that this is useful as a concept toward which society should strive but as a public policy enforced by fiat, he considered it in conflict with the natural processes of the free enterprise system. Higher standards are only gained through increases in productivity which require better health facilities, education and training, not just a

redistribution of income.  Furthermore, public legislation of this sort will lead to private unemployment.

(2)  "The cost of the minimum budget necessary to health, efficiency, and general well-being is approximately equal all over the country.  Hence, common labor rates should be approximately the same all over the country."22/ Van Sickle's contention was that the pricing of different resources should be allowed to reflect differences in their quality.  Where profit  margins are high due to large pools of unskilled labor, outside capital will move in bringing with it many new industries opened up by technical advance.   He believed the uniform minimum wage works against this flow of capital  by reducing prospective profits and encouraging migration away from the region to already highly concentrated industrial areas.

(3)  "The high minimum wage will increase the purchasing power  of workers and thereby create markets for volume production and full employ-ment."  23/  Van Sickle countered this hypothesis with the notion that a flexible system of prices is the best insurance of high levels of consumption and production.  He claimed that downward wage flexibility will be beneficial since it "will facilitate needed transfers of labor and capital  and  will simultaneously firm up wages and profits elsewhere.  It will also  tend  to reduce the duration of structural unemployment."  24/  In contrast,  the maintenance of a high minimum will curtail employment and will  needlessly prolong readjustments.  This would necessitate compensating government expen-ditures under the Full Employment Act, thus "extending federal control of wages into every nook and corner of the country."  25/

He felt the South, in particular, would be adversely affected.  Due to the poor natural resources, the lack of capital, and the "thin" local

markets for industrial products, as well as the scarcity of skilled labor and paucity of managerial talent in this region, he asserted that successful economic development depends on the abundance of willing and trainable unskilled labor. The importance of this factor was illustrated by contrasting the "value added per average worker" in the South with the nation as a whole. For the years 1929-1939 this measure was consistently about two-thirds of national figures. This was taken as evidence of the "ability to pay" of southern industry since there are certain fixed charges that cannot be reduced. Van Sickle's solution was to divide the country into several regions with different wage minima to avoid the dangers which he perceives in the uniform minimum.

Braughman's position was similar to that of Van Sickle. 26/ His was basically an argument in opposition to extension of the minimum wage to farm groups. According to him, an enforced minimum in agriculture would entail various adjustments: (1) less intensive farm operation and curtailment of output would occur; (2) presumably, higher prices would thus encourage smaller farms and sharecropping; and (3) farm employment would decrease.

Richard Lester's position was that both businessmen's responses to questioning and empirical evidence revealed an absence of the type of thought and action usually ascribed to them by "marginalist" theory. 27/ In particular, he examined the relationships among wages, employment and output changes as they related to the businessman's decision-making process.

On the basis of a survey of southern firms in industries known to have North-South wage differentials, he asked executives to rank various factors according to their "relative" importance in influencing their firm's employment. The six factors were:

(1) present and prospective market demand (sales for . . . products, including seasonal fluctuation in demand);

(2) the level of wage rates or changes in the level of wages;

(3) the level of material costs and other non-wage costs and changes in the level of such non-labor costs;

(4) variation in profits or losses of the firm;

(5) new techniques, equipment, and production methods; and

(6) other factors. 28/

The results of this survey gave overwhelming weight to item (1) with item (5) second, followed by items (3), (2), and (4) depending on what measurement was used. From this Lester concluded that "most business executives do not think of employment as a function of wage rates but as a function of output." 29/ To prove that wage rates play a minor role, he used data showing that plants operate at decreasing per unit costs up until "capacity." He concluded therefore that plants are usually designed for a given number of employees. The implication is that wages must be taken as fixed rather than variable costs.

A second test of the response to wage changes was incorporated in a questionnaire asking firms to rank adjustments to a hypothetical sharp narrowing of North-South wage differentials according to percentage of "importance". This is one supposed effect of minimum wage legislation in the United States. The following list of factors was provided:

(1) install additional labor-saving machinery;

(2) improve efficiency through better production methods, organization, supervision, incentives, workloads, etc.;

(3) change the price, quality or kind of products manufactured;

(4) increase sales efforts so as to expand sales and production;

(5) reduce production by deliberately curtailing output; and

(6) other adjustments. 30/

The response indicated that item (2) was considered the most important adjustment, followed by (1), (4), (6), (3), and (5) in that order. Lester was impressed with the small weight given deliberate curtailing of output which (one would assume) implies a decrease in employment.

In addition to arguments against marginal analysis based on his surveys, Lester contended that businessmen do not think in marginal terms. Yet he asserted that, even if they did, the determination of output and employment levels by calculation of marginal criteria would be futile from both a theoretical and practical point of view. This would be especially true for multi-plant and multi-product firms.

Machlup replied to Lester by defending marginal analysis on several grounds. 31/ First, he claimed that the marginal theory is not as ambitious as Lester seemed to think it was. It would certainly be foolish to believe that blackboard illustrations are attempts to depict reality. Yet, although businessmen may not think in economists' terms, it is possible to "translate" business decisions into economic parlance. In addition, the magnitude of the variables involved may not be as critical as textbook examples would lead one to believe. There may thus be a range of behavior which is consistent with the marginal hypothesis. This permits the inclusion of non-employment and non-pecuniary reactions to such exogenous changes as increased wages. Machlup claimed that, in effect, Lester had not refuted marginal analysis but merely his own narrow construction of that analysis.

Secondly, Machlup challenged Lester on methodological grounds. He questioned the validity of Lester's assertion that post hoc rationalizations or conjectures about hypothetical future states by business executives is a true measure of their motives or behavior.

To him the construction of the survey questions was particularly suspect. The use of the word "deliberate" in the second questionnaire (5) probably had a stigma attached to it which could account for its low rank in importance. The measure of "importance" itself is an especially vague and subjective criterion. No indication was given whether importance of factors in determination of employment (presumably changes in employment) referred to the frequency, the extent or the effects of its variations. Even so, Machlup asserted that it is not relative importance that matters but the effect of one variable, all others held constant that is relevant to the behavior of the firm. To hold that wage rates do not comprise an important factor in business affairs is to assert that companies will employ the same number of workers regardless of the level of wages; a conclusion that cannot be taken seriously, if that is how the businessmen interpreted the question. The alternatives were criticized for nonexclusiveness. For instance, item (1) (market demand) would seem to overlap with item (4) (variation in profits).

Stigler's position was that minimum wage legislation does not meet its stated objectives of diminishing poverty and that there are efficient alternatives which could do so. 32/ In his presentation Stigler separated the impact of minimum wage legislation into effects on the allocation of resources, effects on aggregate employment and effects on family income.

Under conditions of competitive equilibrium a minimum wage above the going rate will raise the marginal cost of labor above its marginal revenue product, which will cause the least efficient workers to become unemployed or forced into unregulated industries with lower wages. The effect will be greater the greater the elasticity of demand for the product and the more other productive services (including more efficient labor) can be substituted. The net result will be to decrease output to the point at which marginal cost is again equal to marginal revenue.

Offsetting the employment effect noted above are increases in the productivity of labor through inducements to work harder or alternative production methods. The former possibility was discounted by Stigler for a variety of reasons; he was more inclined to accept the latter likelihood. The increase in costs is somewhat mitigated by the fact that newer techniques formerly unprofitable are now made profitable by the higher wage. Employment falls, due to the decreased output and also because any given output can be produced with less labor.

Stigler discounted the possibility that managerial techniques already available but hitherto unutilized (out of ignorance or sloth) will be used after the minimum wage law's passage. This so-called "shock" effect is unlikely, due to the highly competitive nature of most low wage industries and their high labor-to-capital ratios. These characteristics will make managerial awareness a necessary condition of the firm's survival even before the minimum wage order, so that affected firms could be expected to have already adopted the best of available production techniques.

Stigler next explored the consequences of minimum wage legislation where there is employer control over the labor market, i.e., monopsony. The

monopsonist will maximize profit by equating the marginal cost of labor to the value of its marginal product. At this point the wage rate will be less than the value of the marginal product. With increasing marginal costs and decreasing value of the marginal product, a minimum wage rate which is equal to the value of the marginal product of labor will increase employment and output. Setting the minimum wage at such an "optimum" is an entirely separate matter, however, since it requires some way of accurately estimating the supply and demand curves of the particular firm, which is impossible. Stigler emphasized that such an argument for the national minimum wage rests on the highly unrealistic assumptions that the same optimum exists for all firms and plants as well as for all occupations. Furthermore, such an optimum level may not be the same through time.

Returning to the competitive model, the second effect cited by Stigler with regard to the minimum wage was its effect on aggregate employment. His basic hypothesis was that the higher the minimum the greater will be the decrease in employment. If the demand for labor is inelastic, a minimum wage may increase the relative share of wage-earners and hence, the propensity to consume. This increased demand would counteract the direct employment effect. Since minimum wages are usually granted during periods of rising wages, the increased demand (depending on its magnitude) may be an unwelcome inflationary stimulus, obliterating any rise in real income.

Stigler's third crucial issue was the use of minimum wage legislation to alleviate poverty and the relationship between wage-rates and family income. A minimum wage is basically a mechanism for the redistribution of income. It does this by raising the price of labor thereby increasing the proportion of national income going to this factor. Stigler pointed out,

however, that the redistributive effect is perverse to the extent that it
results in complete or partial unemployment of those it was intended to
help. Stigler made the analogy between the resource misallocation effect
of minimum wages and United States agricultural price policy. He noted that
increases in hourly wages do not necessarily imply increases in annual
earnings which he feels is the more important variable in the poverty equa-
tion. Since low wage employment is often seasonal or sporadic, the poverty
line may still be substantially above the income generated by higher wages.
The possibility of reductions in overtime may dampen the expected income
rise in a similar manner.

Other variable factors not taken into consideration by the minimum
wage solution are the family size and the number of wage earners. Obviously
a small family with several wage earners is better off than a large family
with a single bread winner. Stigler concluded,

> The connection between hourly wages and the standard of living
> of the family is then remote and fuzzy. Unless the minimum
> wage varies with the amount of employment, number of earners,
> non-wage income, family size and many other factors, it will
> be an inept device for combatting poverty even for those who
> succeed in retaining employment. 33/

As alternatives to the reduction of monopsonistic control, Stigler
suggested policies to promote labor mobility such as vocational training
and inducements to relocate workers in low unemployment areas. He felt that
elimination of poverty should proceed from some societary (legislative)
judgment about what the minimum income for each family should be. The
trade-off between security and incentive is one which could be optimized by
wise legislation. At any rate, he believed that minimum wage legislation
fails to solve the problem for several reasons: there is no objective

determination of family need; manipulation of particular factor prices does not strike directly at the critical variables; and minimum wage legislation tends to be selective by occupation.

Blum attacked Stigler's criticisms of minimum wages. 34/ He first discussed the issues centering about the law's aims and effects, then turned to Stigler's proposed alternatives to the minimum wage.

Stigler claimed that minimum wages will not eliminate poverty since hourly wages are not a good measure of the standard of living. Also, the minimum wage causes a decline in employment. Blum asserted that the aims of minimum wages are not to erase poverty, but are:

(1) to eliminate that part of poverty which is caused by the existence of wage rates which do not allow workers sufficient earnings to have a minimum standard of living even if employment were continuous;

(2) to eliminate unfair competition based on substandard wage rates; and

(3) to increase mass purchasing power. 35/

Thus, the standards by which minimum wage laws are judged are important in evaluating their effectiveness.

Blum claims, contrary to Stigler's analysis, that declines in employment which result in the Fair Labor Standards Act (FLSA) experience were due to technological improvements, not to decreases in demand or output. This leaves Stigler in the tenuous position of condemning increased productivity which contributes to economic progress, an increased standard of living and higher income.

Blum finds inconsistency in Stigler's argument that a higher minimum would result in several hundred thousand discharges as well as his argument that it would lead to undesirable inflationary trends in periods of high production.

Stigler's first alternative to minimum wage, encouragement of labor mobility, seems an inadequate substitute for minimum wages. Blum regards negative taxes as "nothing but a public subsidy for unfair competition and for monopsonistic exploitation." 36/ Moreover, he feels such "relief" measures imply "a different concept of equity and human dignity and therefore different means of implementation." 37/

Blum also comments on other minimum wage studies. He feels that by taking perfect competition as a frame of reference, as well as a norm for judging the impact of minimum wage legislation, criticism becomes formal and devoid of reality. The marginal model "implies a static equilibrium situation in which firms are in optimum positions. It is this identification of marginalism with static equilibrium which makes it a useless tool for economic analysis in the real world." 38/ Finally, "marginalism is a particularly unsuitable tool for analyzing a problem which necessitates clarity of ultimate values because it must be discussed in terms of means and ends." 39/

Hamberg's thesis is based on a general equilibrium model in which the minimum wage is economy-wide. 40/ For such a situation it is necessary to take into account aggregate demand increases resulting from the wage change.

For a single firm or industry, Hamberg argues, higher wage costs will undoubtedly result in higher prices and a fall in "effective demand," assuming demand to be elastic. Thus, in the absence of some technological

or organizational adjustment, employment will probably be  restricted.
However, he argues that what is true for the parts is not true for the whole,
for where the minimum wage raises the lowest rates, expenditures will rise
and, assuming constant total income, there will be a redistribution of income
in favor of low-wage groups.  This, of course presupposes that employers
(perhaps anticipating the increased demand) will not reduce employment
instantaneously.  The ultimate result is a higher marginal propensity to
spend and a higher marginal efficiency of capital.

Although price increases will tend to lower the real income  of non-
affected groups, this may be offset by increased employment due to the higher
marginal propensity to spend.  Likewise, the higher aggregate demand  will
compensate for any decrease investment by enterprisers due to their reduced
shares of national income.

In contrast to traditional theory, product demand is not  independent
of factor costs.  The redistribution of income from higher to lower income
groups as a result of the minimum wage would increase demand for the product.
This, in turn, would raise the marginal revenue curve for the product.  If
the marginal revenue curve shifts upward by an amount sufficient to offset
the upward shift in the marginal cost curve, the output will increase.

Hamberg showed that under certain conditions, a minimum wage need not
reduce employment as predicted by the classical model.  Employers  may  be
pursuing policies such as "full cost" pricing or "unit cost" pricing,  so
that they were not previously maximizing total profits.  An increase  in
wages might then increase efficiency and profits.  Where the working force
is necessarily fixed or where there are few possibilities of  substitution
of machinery for labor, employment will remain steady.  At any rate, where

wage costs are a small portion of total costs, substitution may not be profitable. Furthermore, where labor is immobile and employers **are large,** oligopsonistic practices may keep both wages and employment low. Wages are below the value of their marginal product at the profit maximizing level. Raising the wage rate will cause an increase in employment; employment will be maximized when marginal cost, marginal revenue product, and the wage rate are equated.

Rees has stated that "the orthodox theory of wage determination in non-unionized labor markets **was formulated for full-employment situations.** Certain of its implications give rise to difficulties in the presence of involuntary unemployment, and it is the purpose of this article to explore these difficulties." 41/

The keystone of orthodox theory—that wages are equated to marginal revenue product—is true only for conditions of competition. According to Rees, it is not true for situations of monopsony or involuntary unemployment. In the monopsony case, the marginal cost curve has a greater slope and thus lies above the supply curve of labor, and where marginal cost equals marginal revenue product, the level of employment is determined. The wage, however, is set by the supply curve at this level of employment.

Since it was Rees' belief that non-unionized workers will accept work at less than the prevailing wage, involuntary unemployment must be due to forces on the employer side of the market. He stated:

> The existence of an excess supply of labor at current wages
> implies that all employers have a certain power to lower wages
> which is akin to the power of a monopolist. But it also
> implies that this power is not fully exerted. If wages were
> forced down to the lowest amount workers would accept, the
> excess supply would disappear, and all unemployment would

again be voluntary. For involuntary unemployment to exist,
a limit must therefore be present on the employer side lying
above the limit imposed by unorganized workers.

It is thus the clear implication of the money-wage concept
of involuntary unemployment that the wages paid by most
employers do not lie on the supply curve of labor; that is,
that employers by and large do not maximize profits in the
short run. 42/

The importance of this is that analysis of wage-employment problems

using a monopsonistic model with its assumption of no involuntary employment

are relevant only in periods of high economic activity. But it is in such

periods of excess demand for labor that monopsonistic influence in the labor

market is likely to be the weakest.

Such conditions lead to formulation of a theory of wages represented

by Figure 2 below where the PQ is the measure of involuntary unemployment.

FIGURE 2
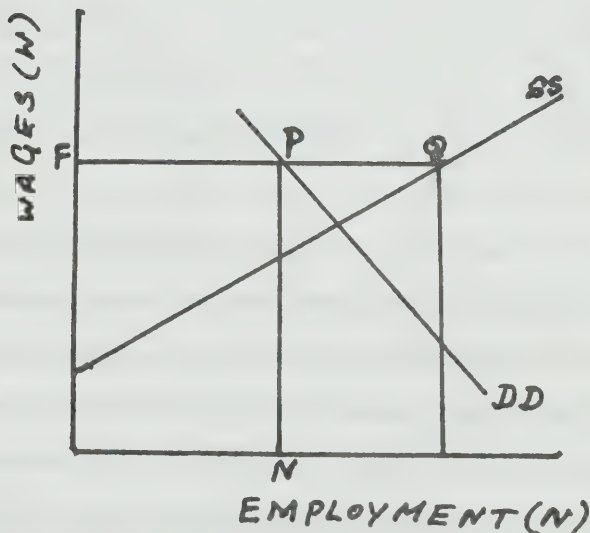
According to Rees:

> One of the implications of Figure 2 is that, abstracting from
> the effects on aggregate demand, the imposition of a minimum
> wage above the present wage would reduce employment.  This is
> true even though the competition for labor by employers is not
> an effective force.  If this is correct, and if it is also
> correct . . . that monopsony is not of great importance in
> periods of full employment, then it follows that minimum wage
> laws, apart from effects on aggregate demand, are never likely
> to increase employment in the economy as a whole.  43/

Klein began his thesis with a brief history of United States  minimum

wage legislation.  44/  He then explained that policies have been formulated

on the basis of a simple economic model which does not consider  multiple

objectives.  The federal minimum is chosen as an example of how the model

falters.  Various objectives are listed and one can see that the economic

model does not include all objectives.

Klein explained why the partial equilibrium marginalists' model may not

be the tool for analyzing certain problems.  He then showed that the theory

as developed demonstrates an employment effect and a wage distribution

effect.  He then went into the studies that have been done previously to see

how they back up the theory.  He concluded that national effects are small,

that effects within an industry are uneven although the same industries are

affected by each law, and that the low wage industries usually remain  in

business by means of various employment and substitution adjustments.  On

the basis of his analysis, Klein proposed to change the basic  theoretical

model.  He felt that monopsony power and labor immobility have a tendency

to depress wage rates.  Under such conditions, a well-constructed law can

leave employment unchanged and lessen the penalty of immobility which is a

social gain.

Klein's final suggestion for future research in the field of minimum wages was that the objectives of such research be explicit before adoption of a particular model. The needs of the researcher will be better served by doing so, since objectives, the model and the kinds of data gathered are interdependent.

In a later paper, Blum dealt with the question of minimum wages as they relate to economic, as well as non-economic factors in the decision-making process of society. 45/ In his analysis he used the concept of social costs, which he divided into social overhead and social variable costs. The former are costs borne by the community-at-large and the latter are costs which may or may not be borne by particular groups depending on their willingness to assume such costs.

Blum asserted that the effect of a minimum wage in such an accounting system is to shift responsibility back to the enterprise. Thus, the Fair Labor Standards Act (FLSA), in conjunction with the Employment Act of 1946, must be considered an instrument designed to "assure a minimum standard in an economy which has a chronic tendency to create sub-standard conditions." 46/

Unfortunately, according to Blum, the minimum standard of FLSA fails to take into account the period of work and life cycle, size of group supported by the wage earner, and periodicity of employment. Furthermore, it is not universal with regard to firms of small size, those engaged in intrastate commerce, or those in specifically exempted lines of commerce. Rather than exempt certain industries or groups, Blum would like to see such firms which are unable to provide minimum standards either be forced to close or be subsidized by the public at large.

Peterson has examined the various minimum wage **hypothesis** and their application to minimum wage provisions of the <u>Fair Labor Standards Act</u>. <u>47</u>/ It was his belief that alternative models of the firm—the monopsony model, the shock model, and the various models having discontinuous marginal curves—have practical significance only insofar as they deny predictions based on the competitive model. The major difficulty with the competitive model is not the model itself, but the impossibility of keeping other para- meters in the system constant. Minor changes in demand or supply conditions or technology could easily obscure the relatively small cost increases—5 to 15 per cent in payrolls or 1 to 3 per cent in total costs in the most affec- ted low-wage industries—that the <u>FLSA</u> has **imposed**. **Since conditions** approaching stability lasted only a few months after the 1938-1940 and 1950 minimums, any substitution of machinery for labor or any exit of firms or capital from the industry would be expected to be minimal. Also, elas- ticities of demand for labor and the product are likely to be low in the short run. Difficulties in measuring demand may be large when an entire industry is considered. Such difficulties are multiplied for the single firm.

He believed that interfirm relationships are important to any analysis of minimum wage effects. For instance, if enough firms close down, remaining firms may experience increased employment, thus biasing before and after studies of surveyed firms in an upward direction. This may also occur in the less extreme case in which wage increases differ among firms.

The implication that low-wage, high impact firms will experience larger decreases in employment is true only if the elasticity of demand for labor is the same for all firms, or if differences are randomly distributed with

respect to wages. Since such conditions are difficult to insure, Peterson
disclaimed rigor in tests using cross-section data. Rather, he "postulates
as an empirically testable hypothesis that employment changes will be
inversely related to wage increases imposed by a minimum wage among firms
making a very similar product for the same market, other things remaining
the same." 48/

Benewitz and Weintraub devised a model to estimate the employment
effects of a minimum wage (for New York City) using a Cobb-Douglas production
function. 49/ They assumed:

(1) no technical change is possible;

(2) product prices cannot be raised; and

(3) percentage shares of dollar output are fixed, thus implying
    that employer profit will remain constant. 50/

Their article makes use of the fact that the percentage change in
employment ($\%\Delta N$) will equal the percentage changes in wages ($\%\Delta W$) times the
elasticity of demand for labor, ($e_L$) or $\% \Delta N = \% \Delta We_L$. 51/ A further
assumption is that whatever percentage increase in total payroll is necessary
to bring all workers up to this minimum is given to workers above the minimum
to partially restore previous wage differentials.

From surveys, they found figures for amounts needed to meet the minimum
as well as the returns to labor in each sector. Using the Cobb-Douglas pro-
duction function of the form $X = AL^a C^{1-a}$ (A assumed to be unity; a is the
return to labor) the calculation of $\% \Delta N = \% \Delta We_L$ was made. The negative
employment effect under these assumptions was quite large for the three
sectors studied.

Guttman contended that Benewitz and Weintraub's use of the Cobb-Douglas function was improper and that assumptions adopted in their study were questionable. 52/ He contended that the X term in $X = AL^a C^{1-a}$ refers to value added rather than sales, thus underestimating a, the elasticity of demand for labor, which in turn underestimates job losses. By assuming that the same dollar amount necessary to bring workers up to the minimum would be given to those above it, half the employment effect is only indirectly associated with the $1.50 minimum itself. The employment effect would be greater to the extent that there were, contrary to Benewitz and Weintraub's assumptions, outmigration of business, price increases, and greater returns to labor.

Benewitz and Weintraub disputed Guttman's claim that the Cobb-Douglas function measures only value-added since, for the firm, output is a function of all inputs where inputs are all factors of production. Sales are used as a proxy for output. The authors acknowledged that the assumed indirect effects of the minimum would increase % $\Delta$ N by a factor of two in their original article. They thought it was better to make a naive assumption rather than a biased one since they did not have adequate data to make a correct one. Finally, the authors agreed that their estimates were minimums and that any estimation of disemployment resulting from outmigration, price changes, and changing returns to factors needs more refined statistics than were available to them.

David Kaun's thesis showed that most of the basic ideas on minimum wages evolved from the competitive model. 53/ However, he believed that this model must be modified in light of empirical evidence. Thus, he made the following assumptions: (1) "monopoly competition" must be allowed;

(2) only the southern United States will feel the direct effects of minimums;
(3) all firms are in short-run equilibrium; (4) labor is paid in accordance
with marginal productivity theory; and (5) the wage structure in each indus-
try will be effected by the minimum wage.

From these assumptions he concluded that: (1) there will be a high
correlation between narrowing of wage structures and the number of workers
below minimum; (2) industries affected will tend towards reducing employment;
(3) output in effected industries and firms will fall relative to other
industries and firms; (4) employment of low-skilled workers will be less
favorable because relative prices of factor inputs have changed; and (5)
marginal firms will be eliminated; and (6) the composition of the labor
force employed by the affected industries will be altered.

Falero noted that the traditional treatment of the possibility of
increasing employment as well as wages under conditions of monopsony is
incomplete. 54/ If, as the traditional theory suggests, a minimum wage
can increase the employment in a monopsonistic industry, then the supply
curve of that industry's product will shift to the right after the minimum
is imposed. Thus, "due to the lower price of output, each firm, in attempt-
ing to produce more, finds that its Value of Marginal Product curve has
shifted backwards." 55/ Figure 3 shows us that the level of employment is
determined by the intersection of the "new" Value of Marginal Product curve,
$VMP^1$, and the supply curve of labor (SS).

FIGURE 3
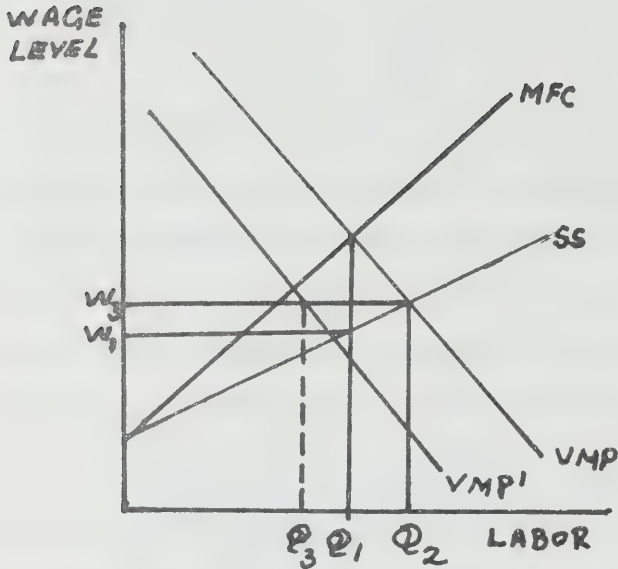


Thus, employment will be less than the amount $Q_2$ determined by the "optimal" minimum wage $W_3$. In figure 3, the new employment level is $Q_3$, less than the pre-minimum level $Q_1$. Depending on the extent of the shift of the VMP curve, the new employment level may be greater or less than the pre-minimum level.

## 1.3 SUMMARY OF THE MAJOR ISSUES IN MINIMUM WAGE THEORY

The theoretical literature on minimum wages attempts to establish an analytical framework in which the effects of the setting of a lower limit on the hourly wage rate may be understood and predicted. Specifically,

attempts have been made to relate the change in this one (independent) variable—the minimum wage—to changes in such (dependent) variables as employment, worker productivity, managerial efficiency and technical improvement, output, wage structure, prices, labor force composition, and interfirm and interregional competition. After the changes in these variables have been pinpointed, the question still remains: what are the objectives of a minimum wage law and does it meet these objectives?

It is evident from the above listed variables that the analysis of the impact of minimum wages lies almost entirely within the realm of microeconomics, or described somewhat differently, within the framework of the theory of the firm. Several factors account for this. First, microeconomic variables have generally held the most interest to those examining the question. Secondly, it is commonly agreed that minimum wage laws have had a rather selected impact, either by industry, region, size of firm, or a combination of them. Third, data on the overall effects of the minimum wage are virtually non-existent. Fourth, the level of minimum wages has been low relative to the prevailing average wage rate for the economy as a whole and the number of affected workers has been small. Thus, measurement of changes in macroeconomic variables due to minimum wages has been obscured by the multitude of other parameters in the system which are constantly shifting.

This is not to say that the macroeconomic effects of a minimum wage would have no effect on the dependent variables that we are studying. For example, if an income redistribution caused by a minimum wage increases demand, employment may well increase. Or, if the consequent higher standard of living boosted workers' capabilities or induced them to work harder, then employment would not necessarily decrease after a minimum wage. What can be

said is that the analysis centers on microeconomic variables (for the reasons
mentioned above) which in turn are affected by macroeconomic variables, and
that these macroeconomic variables are difficult to measure.  As an example,
a firm's demand for labor is a microeconomic consideration, but it is
influenced by the demand for the firm's product which depends partly  on
overall income distribution—a macroeconomic consideration.  This complica-
tion necessitates several assumptions (elaborated in "The Model") about the
macroeconomic effect of a minimum wage.

The dynamic aspects of the minimum wage question are important not only
as they relate to macroeconomic matters but also as they relate to micro-
economic variables.  The two schools of thought which have developed with
regard to minimum wages divide largely along lines of the static or the
dynamic assumptions employed.

If, on the one hand, it is assumed that a particular (competitive) firm
is in short-run equilibrium, then a minimum wage $W_m$ (See Figure 4) which
exceeds the competitive rate for low-skilled labor $\overline{W}$ will raise the return
to this factor above the point at which its marginal revenue product curve
MRPL—the labor demand curve—intersects the competitively determined labor
supply curve s.  The firm will not be maximizing its profits unless it
adjusts factor proportions and/or output so that each factor is earning a
return just equal to its marginal revenue product.

Since the firm was assumed to be previously in an optimum position, the
alternative adjustment paths open to it are severely circumscribed, at least
in the short-run.  Either explicitly  or implicitly, comparative  static
analysis assumes that firms are utilizing all known technology and that no
improvements in managerial efficiency are possible.  It is further assumed

FIGURE 4
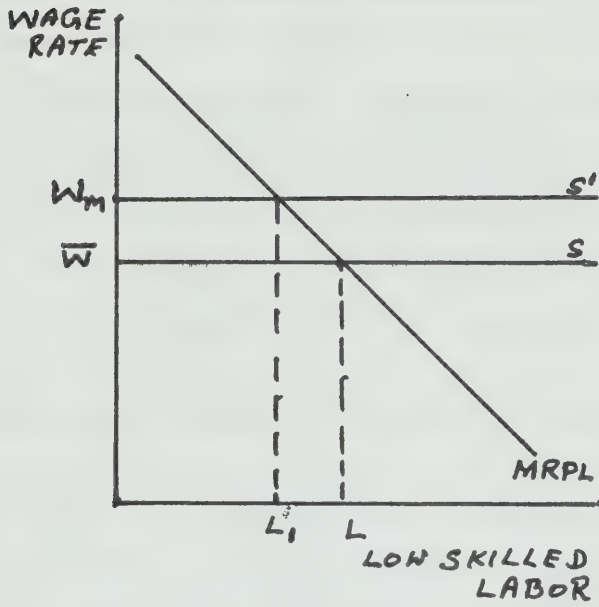


FIGURE 5
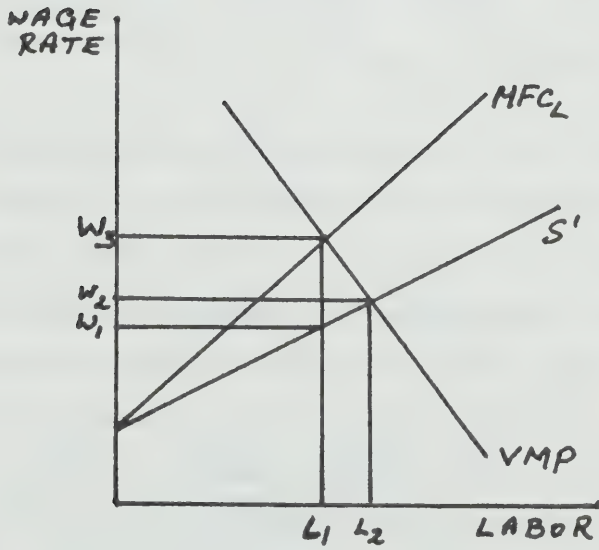
that worker productivity, the cost of other inputs and the demand curve for the final product are unchanged before and after the enactment of the minimum wage.

Because plant and equipment are taken as fixed in the short-run, the only factor remaining which may be varied (assuming variable factor proportions) is low-skilled labor which would have to decline in order to raise its marginal revenue product to the higher wage rate. Thus, the use of this input will decline from L to $L_1$. (Figure 4)

The magnitude of the employment decrease will be greater the more elastic the demand for labor. This, in turn, is greater the more elastic the demand for labor's product and the easier it is to substitute other factors of production. Some economists suggested that plants are built for a specific number of employees and hence, substitution is not easy. Others believe that under certain conditions, the demand curve for labor can be positively sloping. Thus, these groups think that minimum wage laws do not cause serious unemployment effects.

One case in which static analysis admits positive resource allocation effects is where employer control exists in the labor market, i.e., monopsony. Here the supply of labor curve (See Figure 5) which is assumed to be linear and upward sloping with a marginal factor cost of labor curve— $MFC_L$—whose slope is twice that of the supply curve. The value of marginal product curve is downward sloping. The firm will maximize profits by using $L_1$ of labor since at that output $MFC_L$ = VMP and the monopsonist needs only pay a wage of $W_1$. A minimum wage between $W_1$ and $W_3$ will thus increase employment and output. Employment will be maximized at a minimum wage of $W_2$.

Yet those who subscribe to the formal validity of such a model are quick to point out that setting the minimum wage at such an "optimum" requires some way of accurately estimating the supply and demand curves of the particular firm—a difficult task. Furthermore, the use of the monopsonistic argument for the establishment of a uniform minimum wage rests on the highly unrealistic assumption that the same optimum exists for all firms, industries, and regions as well as for all occupations. Thus, even though the anti-monopsonistic effect may be useful in producing positive employment and output movements in particular cases, it is of dubious validity as a paradigm for explaining the effect of minimum wages in general.

As suggested earlier, these and the other above-mentioned theoretical conclusions are deduced from a partial equilibrium model of the firm with rather restrictive ceteris paribus assumptions. When these assumptions and their corollaries are weakened to allow for disequilibrium states and macroeconomic variables, the directions and magnitude of the relevant dependant variables may be significantly altered. For example, it can be argued that a minimum wage results in a transfer of income from stockholders to wage earners. Since the latter group is presumed to have a higher marginal propensity to consume, it follows that demand is likely to be stimulated throughout the economy. A part of this demand may be felt by the affected firms, and employment will increase. The ceteris paribus assumptions will be weakened the longer the time period under consideration.

There are a number of considerations which might alter either the direction or extent of the employment effect of a minimum wage. For instance, it has long been maintained that a minimum wage will increase the workers' efficiency due to the newly achieved higher standard of living.

This may be valid in cases where the pre-minimum rate was providing "less-than-subsistence income." Although such an effect is likely to operate with a lag, the ultimate effect may be to partially or wholly offset increased costs by raising the marginal revenue product of labor.

If the assumption of the existence of optimal entrepreneurial practices is dropped to admit that management may be inefficient, then a minimum wage may "shock" management into cost reducing reforms. Such a shock effect may be presumed present if output, employment and profit are at the same level after and before the minimum wage or if there is some clear indication of reduced administrative costs. The question of whether a shock effect exists seems to depend on the organization of the industry. If the market is not perfectly competitive and the entrepeneur was not previously maximizing profits, a shock effect is conceivable.

Perhaps the most significant relaxation of ceteris paribus assumptions is the allowance for factor substitution and disequilibrium states. Substitution of machinery for labor may be possible over a relatively short time span so that previously labor-intensive firms may be able to avoid losses. Where such technical change has been going on over a period of years, one must be careful not to ascribe too much influence to the impact of the minimum wage. Yet one should recognize that a minimum wage may accelerate any such already-present trends.

It must be noted that "substitution" of capital for labor does not necessarily imply a decrease in employment. Where this substitution lowers costs, increased output and employment may occur.

FIGURE 6
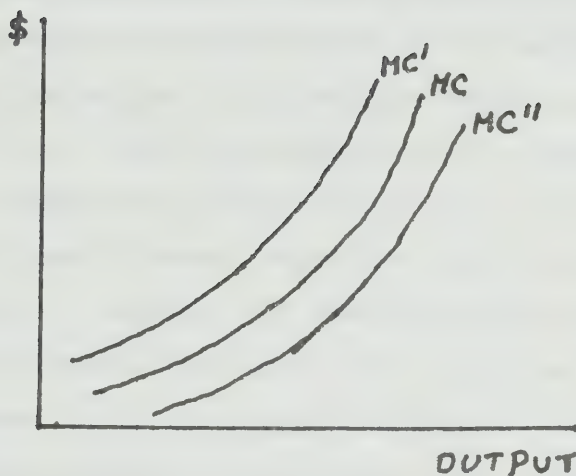


In figure 6, MC is the pre-minimum marginal cost schedule. The immediate effect of the minimum might be to raise the MC curve (due to higher wage cost). Factor substitution may shift the MC schedule to the right, say to MC". This shift in the MC curve means that the firm's supply curve shifts to the right, thus tending to increase output.

If we relax the assumptions of no factor substitution and no change in product demand, we cannot determine price equilibrium. As shown above, the exact changes in the supply curves are indeterminate; any sort of macro-economic effects on the product demand are also hard to predict. Some economists predict that, in any case, price increases would be small since labor costs are a small part of total costs. This assertion, it seems, is an empirical matter.

Another important question is: what effect will the establishment of a floor on wages have on the wage structure of affected firms? Will all those originally above the minimum get an increase or will there be selective increases? Will there be a lag in the increases? If increases do occur, will proportional or absolute differentials be maintained? Seemingly such questions are amenable only to an empirical analysis. Furthermore, such judgments will depend on the base period taken for companies of pre-minimum and post-minimum wage structures and the movement of wages and prices at the time of enactment. A final variable to be considered is the relative impact among particular groupings in the economy. As an example, some assert that the southern industries would be especially hurt by the minimum wage since their ability to pay is low. Others believe that labor intensive industries like agriculture would be adversely affected. It is suspected also that low-skill, low-wage groups of workers would suffer more from severe decreases. All of these questions depend on the relative magnitudes of the direct and indirect effects of the minimum wage and on the demand elasticities for different kinds of labor.

This plethora of variables surrounding the minimum wage can cloud the question of whether the minimum wage achieves certain objectives. One attack on the minimum wage is that it does not actually eliminate poverty since the minimum reduces employment and hours, and does not take into account periodicity of employment, family size and other relevant variables. The response is that the minimum wage was not intended to eliminate poverty but only certain causes of poverty; i.e. poverty caused by substandard wages.

In light of the above theoretical analysis it is understandable that an a priori theoretical model of minimum wages is not possible. We must

appeal to the facts in order to determine what the situation is in any
particular instance. Accordingly, an effort will be made in chapter IV to
analyze the available Canadian data and draw some inferences from it about
the impact of Federal Canadian Minimum Wage on employment, wage differ-
entials, and costs.

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Chapter II

LEGAL ASPECTS OF MINIMUM WAGE LEGISLATION

## 2.1 GENERAL STATEMENT

Minimum wage legislation must be understood, not only in its economic dimensions, but also in terms of the legal and social philosophy which lies behind it. This is imperative since such legislation has its raison d'être in the maintenance of certain values which society considers important and which are not being achieved within the existing institutional framework. Specifically, minimum wage legislation like other industrial standards regulations is an attempt to set a lower limit on the conditions under which employment may take place. Such limitations are believed necessary to ensure the worker a return on his labor sufficient to provide for an "adequate" standard of living for himself and his dependents.

In most western societies it is the consensus that all should share in the collective wealth of the economy at least to the extent that none are permitted to subsist in abject poverty. Secondly, it is felt that those able to work should contribute to their own welfare so that they are not a "burden" on the rest of society. Minimum wage legislation attempts to advance these goals by ensuring a living wage to those employed. In

this way it is thought that poverty can be alleviated and the quality of the working force improved.

It remains to be asked why existing institutions do not provide socially desirable minimum standards for their employees and why government must intervene. In sociopolitical terms, the reason often given is that workers are somehow "exploited." That is, due to unequal bargaining power, the employer is able to hire workers at less than their "true worth." Alternatively, it is argued that low wages are used to "subsidize" inefficient management practices. Thus, raising this wage rate will stimulate better management and ultimately raise worker productivity.

Legal regulation of wages and hours has a long history dating from the Factory-Acts in Great Britain in the nineteenth century. This type of legislation has had undoubted appeal due to its virtues of simplicity and minimal interference with the decision-making machinery in the private sector.

Early minimum standards legislation was generally limited in scope. That is, rates and hours were mostly established in specific industries or in certain political subdivisions of each country. In Great Britain, for instance, the system of wage boards for particular industries was formally introduced by the British Trade Boards Act of 1909. This system was based chiefly on the desire to decide a fair wage and was meant to act as a countervailing power for the workers against the employer. The 1896 law in Victoria (Australia) was designed to end "sweating" — the term commonly applied to the practice of depleting the stock of human capital through overwork and underpayment.

## 2.2  STATE AND PROVINCIAL MINIMUM WAGE LAWS

The first minimum wage legislation on the North American continent
came from the state and provincial subdivisions of the United States and
Canada rather than from the federal governments.

The stated purposes of these laws varied from state to state and
province to province.  The first of such laws enacted in Massachusetts in
1912 was supposed to raise wages in occupations where a substantial number
of workers were being paid a wage inadequate to meet the necessary cost of
living and to maintain the worker in health.  The Oregon law of 1913 which
served as a model for subsequent state legislation incorporated the language
of the Massachusetts act but, unlike the Massachusetts act, was enforceable.
Minnesota's law seemed to imply a somewhat more generous purpose.  There,
the minimum was supposed to be not only "sufficient to maintain the worker
in health" but also sufficient to supply the worker with the "necessary
comforts and conditions of reasonable life." Wisconsin's law aimed at
providing a wage "sufficient (for) welfare", welfare meaning "reasonable
comfort, reasonable physical well-being, decency and moral well-being." 1/

The first minimum wage legislation in Canada was effected in Alberta
in 1917, in Manitoba and British Columbia in 1918, in Quebec and Saskat-
chewan in 1919 and in Ontario in 1920.  Eventually all provinces enacted
minimum wage legislation.  Although these acts did not make explicit their
underlying goals, in practice most have sought to provide a "living wage"
for the lowest paid classes of worker.  According to J.W. MacMillan, a
past chairman of the Minimum Wage Board of Ontario,

> ...it was upon the plea of the prevention of low wages that all
> minimum wage legislation in Canada came to be enacted...so
> strongly does public sentiment react to this conception—the

right to live from one's work—that an instance of flagrant underpayment need only be pointed at in order to be ended. 2/

Coverage under the early minimum wage laws was, with some minor exceptions, limited to females and minors. These two groups were often paid less than subsistence wages.

Whereas it was thought that adult males could achieve a higher minimum level from collective organization than from legal regulation of wages, the same was not thought possible for women and minors. Since they could not be as easily organized and since their wages were commonly believed to be supplemental to that of a family's "breadwinner", women and minors were more easily "exploited". Thus, minimum wage legislation was meant to ensure for such workers at least a minimum standard of living. In the United States, the possibility of inclusion of men under minimum wage legislation was limited by constitutional prohibitions on restraints of freedom of contract. In fact, the status of all enforceable minimum wage laws in the United States was in doubt from 1923 when both the Oregon and Washington (D.C.) laws were declared unconstitutional until 1930 when the court reversed its earlier decisions by ruling constitutional the state of Washington's 1913 minimum wage law. At present, 38 states including Puerto Rico and the District of Columbia have minimum wage provisions. Of these 14 still apply to women and/or minors only.

In contrast to the various states, all Canadian provinces eventually established minimum wage standards for adult males as well as for females and minors.

With the exception of the British Columbia Act of 1925, the extension of coverage to males did not come until the 1930's. The serious depression

resulted in widespread deterioration of wages and other labor standards.
It was thus realized that men as well as women required legal protection
against socially unacceptable employment conditions. As a result, coverage
was extended to males in Manitoba and Saskatchewan in 1934, in Alberta in
1936 and in Ontario and Quebec in 1937. In most of these acts provision
was made for a standard work week and higher overtime payments.

No new legislation was enacted until after World War II when New
Brunswick and Nova Scotia passed acts covering both men and women. (Imple-
mentation of the Nova Scotia Act was delayed for over 15 years). Newfoundland
provided for a minimum wage board in 1950, followed by Prince Edward Island
in 1959.

State and provincial minimum wage laws have usually been selective by
industry and/or occupation. The early Massachusetts law, for instance,
established minimums by occupation after it was shown that wages were below
the level essential to maintenance of workers' health and standard of living.
More common, however, are later laws which, when written, provided separate
orders for the various occupations. Also, most states have specifically
exempted certain classes of employment from coverage. Typically, these
include agricultural workers, outside salesmen, domestic servants, employees
of non-profit organizations and professionals.

Just as in the United States, Canadian provinces have utilized the
system of wage orders. At present these orders include almost all occupa-
tions except farm labor and domestic service. In Prince Edward Island,
coverage is more restricted than in other provinces; in particular, minimum
wages for women are limited to restaurant and laundry workers.

Setting of minimum wage rates in the United States has been accomplished either through legislation or through wage boards. The former method is used by approximately two-thirds of those jurisdictions having minimum wage laws while the latter is used by the remainder. Where the wage is fixed in law, there seems to be a greater degree of uniformity in the level between occupations than where wage boards fix the level for each industry or occupation. In states such as New York and Oregon where the wage boards system is employed, wages can be more easily adjusted to meet special conditions in the various industries covered. Thus, worker productivity and the economic health of each industry may enter into the determination of wage levels. 3/ In some states differentials are set for males and females, experienced workers and learners, and adults and minors. Rural-urban differentials are employed in New York, Minnesota, Kentucky and Colorado.

The Canadian Provinces have evolved systems which incorporate a single wage board for the entire province, rather than separate boards for each industry as in New York. Boards in Newfoundland, Manitoba and New Brunswick are required by law to be equally representative of employees and employers. In contrast, the Ontario board is composed of three Department of Labour officials. The British Columbia board must include some representatives of the general public as well as at least one woman. In Nova Scotia, Saskatchewan, and Manitoba there are two women on the wage boards. In each province a government official, usually a member of the Department of Labor, acts in a neutral capacity as chairman.

The boards issue both general and special wage orders. In most provinces the general order sets rates applicable to most workers, while

special orders set higher rates for particular industries or occupations.
Until 1967 when it established a general minimum of $1.25, the British
Columbia board issued orders separately by industry and occupation.

Principles followed in setting the level of the minimum vary from
province to province. In Quebec the board is directed "to take into con-
sideration competition from outside countries or from the other provinces
and the economic conditions peculiar to the various regions of the province."
In Saskatchewan the board is supposed to base the minimum rate on either
"what the board deems adequate to furnish the necessary cost of living to
the employees in the class of employment affected" or "what the board deems
fair and reasonable having regard to the wages that the board considers to
be generally prevailing in the class of employment affected". The Manitoba
board is to consider "the cost to an employee of purchasing the necessities
of life and health."

To translate the general principles embodied in legislation establish-
ing minimum wage boards into appropriate wage rates, inquiry must be made
into conditions prevailing in the area of employment where the minimum is
to be set or revised. Cuthbertson lists five different means employed by
the boards in determining rates:

1. inquiry by the board itself or by the Department of Labour
   into actual conditions;

2. consultations with the interested employer and employee;

3. public hearings;

4. a conference of employer and worker representations; and

5. statutory requirements regarding the keeping of records
   by employers. 4/

Like the majority of states, rates determined by most provincial wage boards have been on an hourly basis. Saskatchewan, however, sets hourly rates for part-time workers only. Minimums for fulltime workers are on a weekly basis. Weekly rates apply to special categories of workers in various provinces.

Eight provinces provide that inexperienced workers may be paid lower rates than the minimum for periods ranging from one to six months. Six provinces have set special rates for young workers. Likewise, most provinces have made provision for the hiring of handicapped workers at sub-minimum rates. Often such exceptions are made by individual permit or are applicable only to certain occupational classes.

Other provisions typically incorporated in provincial legislation include "daily guarantee" or "call-in pay" requirements; regulation of frequency and method of payment; and maximum deductions for uniforms, lodging and board. Several provinces specify that tips are not to be considered in calculating hourly wage rates for minimum wage purposes.

Over the years all provinces have increased both the level of the minimum and the classes of workers to which it is applicable. For the most part general wage orders now cover the vast majority of the working force under provincial jurisdiction. Recent changes in coverage have been made typically under special wage orders.

Since 1965 all provinces with the exception of Ontario and Newfoundland have increased the rates applicable under general minimum wage orders. The rates in the above provinces have remained at $1.00 an hour for Ontario and $.70 (male) and $.50 (female) an hour for Newfoundland. In 1966 Nova Scotia

increased its rates applicable to urban zones from $1.05 for males ($.80 for females) to $1.10 for males ($.85 for females) with slightly lower rates applicable to rural zones. Saskatchewan's urban weekly minimum wage was increased by $1.50 in 1965 and $2.00 in 1966 so that the present rate is $40 a week. Both Alberta and Manitoba authorized increases in their minimums to $1.00 in 1965 and to $1.25 in 1967. The latest Manitoba action, which eliminated geographic differentials, provided for gradual increases over a period of a year, the $1.25 level to be reached in December 1968. Yearly increments have occured for urban manufacturing industries in Quebec from 1965 to 1967, the level rising from $.70 to $1.05 over the three-year period. Minimums for service industries and rural zones were raised at the same time with the result that differentials among the sectors were narrowed. The rates for service and manufacturing occupations in New Brunswick were raised by $.10 in 1966 to levels of $.90 and $1.00, respectively. An additional $.10 an hour was applied to service occupations in 1967 so that all workers covered by the general order now receive a minimum of $1.00. The rate applicable to males over 18 in Prince Edward Island was increased from $1.00 to $1.10 in 1966. In 1967 British Columbia provided for a general order of $1.25 to fill any gaps in coverage since orders in that province are made on an industry or occupation basis.

## 2.3  FEDERAL MINIMUM WAGE LAWS

### 2.31 Fair Labor Standards Act (U.S.)

The United States Fair Labor Standards Act of 1938 was a significant departure from past minimum wage laws. The significance of the Act lies in its provision for a single minimum to be applied to all industries in all regions of the country engaged in interstate commerce.

The law followed soon after recovery from half a decade of depression
and it is interesting to note exactly how this affected the attitude towards
minimum wages. Advocates felt that such a law was needed not only to combat
adverse working conditions and to provide for an adequate standard of living
but also to stabilize wages at a high level so that purchasing power (aggre-
gate demand) would be maintained. By placing a floor under wages a downward
spiral of wages could not occur. 5/

Interpretations by the courts have found the following objectives
implied in the act:

1. to secure for those unorganized workers who lack sufficient
   bargaining power a minimum subsistence wage;

2. to extend the frontiers of social progress by ensuring to all
   able-bodied working men and women a fair day's pay for a fair
   day's work;

3. a reduction in working hours to spread employment;

4. to place a floor under wages and a ceiling over hours;

5. to promote economic stability through increased purchasing
   power;

6. to regulate wages industry-wide, and under conditions which
   would not give one section of it a competitive advantage
   over another; and

7. to maintain a decent standard of living. 6/

Thus, it can be seen that not only does this legislation embody the
traditional goal of reducing poverty but also it attempts to eliminate
"unfair" competition between firms where such competition is the result of
a lower prevaling wage.

Coverage under the Fair Labor Standards Act (F.L.S.A.) of 1938 was
limited to workers individually "engaged" in interstate commerce, in the

"production of goods" for interstate commerce or in activities necessary to
such operations.  Most of those covered were in manufacturing with most of
the remainder in transportation, communication, wholesale trade and mining
industries.  Certain occupational groups such as agricultural workers were
specifically exempt.  Coverage was restricted in 1949 by an amendment which
defined as "covered activities" only those "closely related and directly
essential" to the production of goods for interstate commerce as opposed to
activities "necessary" to such production.  In 1961, however, coverage was
put on a new basis.  All employees in any "enterprise" which had some
employees engaged in interstate commerce were included if the enterprise met
certain minimal gross sales volume requirements.  This provision served
mainly to bring employees in retail and service industries as well as con-
struction, gasoline service stations, and local transit under jurisdiction
of the Act.  In 1966 coverage was further increased by redefining "enter-
prise" and "employer" and reducing the number of statutorily exempt indus-
tries and occupations.  Specifically, the dollar volume test was reduced
from $1 million to $500 thousand with a further reduction to $250 thousand
to become effective February 1, 1969.  Previously exempt occupations
included were employees in laundries and drycleaning enterprises, construc-
tion, non-Federal hospitals, nursing homes, private and public elementary
and secondary schools and institutions of higher education, both profit and
non-profit. 7/

The level of the minimum has been raised from time to time.  The
original act called for a 25-cent minimum to be increased by steps to 40-
cents over a seven-year period.  The timing of such increments was to be
determined by tripartite industry committees, chosen with regard to geo-
graphical location of the particular industry concerned.  It was the job of

the industry committees to investigate conditions in the industry and to recommend to the administrator the highest minimum wages (up to 40 cents) which it found would not substantially curtail employment. 8/

After the establishment of the 40-cent minimum, the job of fact-finding and recommending changes in the law was delegated to the Department of Labor itself. Under section 4(d) of the Act, the Secretary of Labor must submit to Congress an annual report containing an evaluation and appraisal of the minimum wages established by the Act. These reports have incorporated studies of the Act's effectiveness in fulfilling its stated goals, as well as impact studies and studies designed to evaluate the feasibility of improving the provisions of the law. Increases authorized by Congress were 75-cents in 1950; $1.00 in 1955; $1.25 in 1961; and $1.60 in 1966. The 1961 and 1966 amendments were incremental with a lesser level of $1.30 in 1966 set for newly covered farm workers.

In setting all these levels, the principle followed seems to have been to provide a reasonable standard of living without unduly restricting employment or profits. Controversy over the wage level which optimized this goal has, of course, been settled through the political process. 9/ The law is administered directly by the Department of Labor and enforcement is carried out through a series of spot checks with special attention given to high impact areas and previous offenders.

### 2.32 Canada Labour (Standards) Code

The Canada Labour (Standards) Code was enacted in 1965 and took effect on July 1 of that year.

The Code is unique among wage legislation since it incorporates minimum standards for vacation and paid holidays as well as for wages and hours. It provides for a minimum wage of $1.25 an hour; a standard eight-hour day and 40-hour week with time and a half for overtime; a maximum 48-hour week; eight general holidays with pay and two weeks annual vacation after every completed year of employment.

The Code aims to eliminate poverty amongst the lowest-paid workers and to assure them the highest standards economically feasible. A more detailed account of the objectives of the Code is revealed in the Parliamentary debates at the time of its passage and in subsequent statements by Labour Department officials. According to A.J. MacEachen, then Minister of Labour,

> It is a fundamental principle of the proposed legislation, not just as a matter of convenience, that the bill combines provisions dealing with four basic labour conditions as well as related matters. This has been done so that all employees within our jurisdiction will be ensured as a matter of right, of as high a standard in these basic labour conditions as is within present reach. 10/

Referring specifically to the hours of work provisions he stated,

> It is generally recognized that excessive hours worked over long periods of time do not contribute to industrial efficiency, are injurious to health and can be an important factor contributing to industrial accidents. Technological advances and gains in productivity have already brought substantial benefits to workers in the form of shorter hours as well as in other ways, and will no doubt produce more and more leisure time in the future. We must seek means of absorbing this leisure by providing for a more equitable sharing of it. The enactment of the 40-hour standard is thus intended not only to benefit those employees under Federal jurisdiction who still work long hours, but also to help spread employment among the work force. 11/

The Hon. Michael Starr (Ontario M.P.) made explicit some of the expected economic consequences of the minimum wage provisions of the Code:

> Although some thousands of workers will receive wage increases
> directly or indirectly as a result of Bill No. C-126, which has
> as a consequence the establishing of a national minimum wage, I
> think there should be little adverse effect on the functioning
> of the economy generally or in most of the industries involved.
> I am sure that no serious employment dislocation will follow,
> nor would I anticipate that there would be price increases
> directly attributable to the minimum wage.  On the contrary, I
> think the resultant increase in purchasing power would stimulate
> production in other sectors of the country.  12/

According to Phillip Cohen, Chief of the Federal Industries Division,

Economics and Research Branch of the Canada Department of Labour, the

integrated nature of the Act reflects the fact that wage policy in Canada

was meant to be a part of overall economic policy.  It was felt that esta-

blishing minimum wage standards would affect aggregate demand and economic

growth.  Thus, it must be coordinated with other instruments of macro-

economic policy.  Since some adverse employment effects were expected, the

minimum standards provisions were considered to be necessarily linked to

manpower policy.  Dislocated workers could thereby be returned to gainful

employment.  13/

Mr. J.C. Munro (Parliamentary Secretary to the Minister of National

Health and Welfare) believed that the establishment of minimum standards

at the federal level was intended to serve as a model for future provincial

measures.  One of the envisioned effects of the Code was,

> ...the pressure it will bring on the provinces to pass a similar
> type of legislation which will cover all employees across Canada.
> Related in a sense to that effect is the consideration that the
> legislation will go some of the way towards combatting poverty
> in Canada.  14/

In particular, there would be a uniform minimum standard for workers

under Federal jurisdiction no matter what area of Canada they happened to

to be located in.  Introducing the bill to the Senate Senator Donald Smith

(Queens-Shelburne) noted that,

Establishing minimum standards in federal industries will perhaps
have the greatest impact on the wages and working conditions of
those people in non-urban or rural areas of Canada where labour
standards are usually lower.
...For the first time the working conditions in these areas will
be raised up to a national standard, depending only on whether the
workers are employed in an industry or on a contract under federal
jurisdiction.  15/

This sentiment was emphasized by Senator Croll:

This bill goes a long way to establish a sound economic basis for
all Canadians.  Though it does not do anything for the better-off
majority who possess union negotiating strength, it does help the
minority.  It can and should be viewed as an instrument of social
policy in that it aims to create more jobs and raise living stand-
ards, and this will in good time bring uniformity across the
country.  16/

Coverage under the Canada Labour (Standards) Code is limited to those
specific industries and undertakings over which Parliament has exclusive
legislative authority as enumerated in the British North America Act.
Parliament is empowered to regulate and control such activities deemed to
be of a national, interprovincial or international nature.  Specifically,
the Code applied to the following:

1.  operations that connect a province with another province or
    country, such as railways, bus operation, trucking, pipelines,
    ferries, tunnels, bridges, canals and telegraph, telephone and
    cable systems;

2.  all shipping and services connected with shipping, e.g., long-
    shoring and stevedoring;

3.  air transport, aircraft and aerodromes;

4.  radio and television broadcasting;

5.  banks;

6.  primary fishing, where fishermen work for wages;

7.  flour, feed and seed cleaning mills and feed warehouses;

8.  grain elevators;

9.   uranium mining and processing;

10.   defined operations of specific companies that have been
      declared to be the "general advantage" of Canada or of
      two or more provinces; and

11.   most federal Crown corporations, e.g., the CNR, Air Canada
      the CBC and Polymer Corporation.  17/

The $1.25 minimum, unlike the provincial minimums, was set by statute
rather than by wage boards.  In this respect it resembles the United States
federal minimum.  Although special deferments were issued after the effec-
tive date, the level of the minimum is standardized at $1.25 for both men
and women in all covered industries in all provinces and territories.
Youths under 17 must not be paid less than $1.00 an hour and special pro-
visions may be made for apprentices and disabled workers.

The level of the minimum was subject to debate at the time of the
Code's passage.  Some members of Parliament including Mr. Stanley
Knowles (M.P. Winnipeg-North Centre) believed the level of $1.25 was too
low.  He suggested,

> ...that if a person earns the minimum wage of $50 a week for 50
> weeks in a year, allowing for two weeks' annual vacation as set
> out in this legislation, that comes to a total of $2500 a year.

> I remind the minister (of Labour) that it is fairly generally
> accepted in the United States amongst social workers and
> government people as well that $3000 a year is the poverty
> demarcation line.  Surely if that is the case . . . it is
> hardly appropriate in 1965 for us to pass a minimum wage law
> that at best produces an annual income $500 below that figure.

> The fact that $1.25 is no longer a sufficient level for a mini-
> mum wage is also attested by the fact that the Canadian Labour
> Congress, which for years advocated $1.25 **an hour,** at its con-
> vention last April in Montreal amended this policy and proposed
> $1.50.  I suggest, Mr. Chairman, that the action taken by the
> Canadian Labour Congress represents a reasonable stand and that
> the least we should do in parliament is to keep up with this
> kind of minimum. 18/

In reply to Mr. Knowles, Mr. J.C. Munro M.P. noted that,

> One thing the hon. member did not emphasize in his remarks is the
> fact that this is minimal legislation. We are not advocating
> across the country that this is what should be paid or even acknow-
> ledging that it is an acceptable standard. This is minimal legisla-
> tion, and is the point below which wages should not fall. This is
> the aspect that should be emphasized as the governing factor in the
> minds of members when they vote for this legislation. We are well
> ahead of many provincial legislatures in this field and if we were
> to set a higher standard it would not be realistic. 19/

Mr. MacEachen (then Minister of Labour) then added in refutation of those

who advocated a lower minimum that,

> We have been confronted in the preparation of this bill and in
> establishing a standard of $1.25 with constant pressure from many
> groups in the country which tell us that our standards are far in
> excess of any provincial standards, let me say this: The standard
> proposed in this bill is a high minimum standard. It is the high-
> est on this continent. It compares favourably, even dramatically,
> with provincial legislation proposed by any government of any
> political stripe in this country. 20/

The view of Messrs. Munro and McEachen, it would seem, was that taken by

the majority.

Administration of the Canada Labour (Standards) Code is carried out

directly by the Minister of Labour. The Minister is empowered to appoint

commissioners to make inquiries into any industrial establishment covered

by the Code under the provisions of the Inquiries Act. Inspectors may

examine all books and payroll records to determine compliance with the law.

Where compliance is lacking the employer is required to make full compensa-

tion for past insufficiencies in payment.

Thus far we have reviewed the various reasons which were felt to have

induced legislators to pass minimum wage laws, such as the perception that

workers, and particularly women and children, did not have sufficient

bargaining power to get fair compensation from employers. It was observed
that state and provincial governments have been the first in North America
to introduce minimum wage laws, to be followed decades later by the federal
governments. Coverage of such laws has been widened steadily so that by now
virtually all workers, both male and female, are included. There have been
fears by knowledgeable persons on the subject matter that minimum wages
would fail to improve the lot of those whom they were meant to help, the
poverty-stricken and 'exploited', by making them lose their jobs and hence
all income. The next chapter will review some of the research hitherto
conducted on the consequences of such laws.

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# CHAPTER III

## SURVEY OF MINIMUM WAGE STUDIES

### 3.1  INTRODUCTION

Past minimum wage laws have from time to time been subjected to empirical investigation in order to assess the economic consequences of such statutes.  The principal variables heretofore examined have been output, employment, wage differentials, and prices.  Other variables such as worker and managerial efficiency; interregional and interfirm competition; and labor force composition have been dealt with more tangetially.

### 3.2  STATE AND PROVINCIAL MINIMUM WAGE STUDIES

In the early minimum wage studies researchers had to cope with inadequate data at their disposal.  Frequently the methodology used as well as the selection of the statistical tools left much to be desired.

A series of studies on minimum wage was published in the International Labour Review during the 1920's. 1/  They found generally that as a result of minimum wage legislation wages rose with little or no decline in employment.  These early studies suffered from both insufficiency of data and poor methodology, such as the absence of cross-sectional analysis.   No

efforts were made to examine the relative changes in the covered (by the minimum wage law) and uncovered sectors by interregional and interindustry analysis or by intra-industry comparisons.

Studies for state minimum wage in the United States contained many of the same deficiencies. Thus, Broda found that during the period 1917 to 192⁷, following the California minimum wage enactment, wages increased in almost all the cases studied. 2/ Where employment declined it was attributed to other factors. Broda observed that in Massachussetts from 1912 to 1914 no adverse effects were generated by that state's minimum wage.

The Women's Bureau of the United States Department of Labor conducted a survey on the impact of the Oregon minimum wage as it applied to retail stores, and concluded that although there was a decline in employment for women it could not be attributed to the minimum wage laws. 3/ Later Department of Labor surveys concluded that such laws had little influence on unemployment. 4/

Peterson reviewed some of the earlier studies, including the one by the Department of Labor on Oregon, and observed that there was a definite employment effect associated with minimum wage laws. 5/ Based on an analysis of the Oregon, New York and Ohio studies done on State minimum wage laws as they affected women employment, Peterson hypothesized that "...groups of firms and groups of workers with the largest wage increase imposed by a minimum wage order will have the least favorable employment changes, providing that they have similar labor-demand elasticities and are subject to similar changes in other influences on their employment "6/

Peterson then set out to test this proposition and he came up with the following findings:

a) For Oregon retail stores, 1917-14 he noted that the data were consistent with the hypothesis mentioned above since "... employment and man-hour changes tended to be negatively related to changes in average wages for comparisons among stores, between females under the $6.00 minimum and females under the higher minima, and between males and females." 7/ He pointed out that previous studies, such as the ones on Massachussetts and California both of which used highly aggregated data, could not reveal such differences; and that upon closer inspection other factors seemingly influencing employment were unimportant, such as the business recession of 1914, the regulation of hours, and the elimination of free services,

b) The New York power laundries in 1933-35 showed similar results. Official studies tended to obscure the employment effect since total employment was rising as a result of the recovery from depression conditions. Cross-sectional data revealed, however, that male employment was rising faster than female employment, which was contrary to the hitherto observed trend whereby women workers constituted an increasingly large proportion of the total work force in that industry. Using man-hours instead of the number of workers employed as a measure of the impact of the minimum wage, he observed an inverse relationship between changes in wage rates and employment, i.e. employment declines as wages rise, and conversely. This finding was reinforced by the fact that in Pennsylvania laundries (not subject to minimum wage at that time) employment did not decline during the same time interval.

c)  As for the Ohio dry cleaning establishments in 1934-35, the imposition
    of a minimum wage yielded less definite conclusions than in the case
    of the Oregon and New York studies.  However, comparing Indiana
    establishments (not subject to any state minimum wage provision) with
    the ones in Ohio it was established that while employment increased
    moderately in Indiana during the time period under study, it declined
    somewhat in Ohio with the decline particularly noticeable for female
    workers.  Furthermore, the employment effect was less pronounced for
    family plants—which were not subject to the minimum wage law—than
    for non-family operations.  Ohio men had smaller wage increases and
    greater employment and man-hour gains than women; however, similar
    indicators in Indiana suggested that these might have been due to
    factors other than the minimum wage.

Richard Lester, analyzing Peterson's findings, believed that the data
in Peterson's studies did not confirm his thesis that employment changes
will be inversely (i.e. as wages go up employment declines, and vice-versa)
related to wage increases imposed by a minimum wage among firms making a
very similar product for the same market,  other things remaining the same.
Lester was skeptical of Peterson's observations on various grounds, as
follows:

a)  Oregon Retail Stores, 1913-14: — Based on a correlation analysis Lester
    felt that the relationship between employment changes and the business
    cycle was stronger than between employment changes and the minimum wage,
    i.e. the state of the economy essentially determines employment. Further-
    more, the greater decrease in female than in male employment was partly
    due to hour restrictions, while certain previously free services were
    no longer provided free of charge.

b) <u>New York Power Laundries, 1933-35</u>:—The impact of the depression was less severe in New York than in Pennsylvania and consequently during recovery wage increases in New York were smaller than in Pennsylvania. Also, employment increases were in fact greater in New York than in Pennsylvania.

c) <u>Ohio Dry Cleaning, 1934-1935</u>:—Where women's wages rose almost twice as fast as that of men, men did not displace women on a net balance. Where men's wages increased almost twice as fast as that of women, men actually displaced women on a net balance. Furthermore, Ohio firms unlike the ones in Indiana, were larger and thus more amenable to the installation of labor-saving equipment.

Peterson's reply to Lester's issues above was that he had already taken account of many of the arguments raised by Lester and that the latter attributed unwarranted claims of conclusiveness to Peterson's studies. 8/ In conclusion, the reader will probably become aware of the difficulties of reaching a conclusive verdict on the impact of the minimum wage laws despite the fact that both authors analyzed the same data but came to different conclusions.

An extensive study of the minimum wage effects was made after New York State's minimum wage for workers in the retail trade was raised to $1.00 in January 1958. 9/ Almost three-fourths of the stores in the state were not directly affected by the wage order since they had no employees below the minimum. Only some 12 percent of all retail trade workers were previously below the minimum and raising their wage to the minimum wage level required an increase in the total wage bill of less than one percent. Wages of some workers were raised above the minimum to preserve previously existing

differentials.  Adaptation to the increased wage cost was divided into
'offsets' and 'adjustments.'  Offsets were defined as reductions in payroll
costs through changes in weekly hours, layoffs and failure to replace
workers.  Adjustments included economies in store operation, reduction in
services to customers, price increases and other payroll savings.  The
study found that "...about 62 percent of the stores that had minimum wage
costs, reported they had taken no action to lessen these costs.  About 23
percent made offsets - two-fifths of these also made adjustments—while 15
percent made adjustments - two-thirds of these also made offsets."  10/

Offsets were more likely in large than in small stores.  The higher
the impact of the additional wage bill, as measured by its percentage of
total payroll, the larger the offsets tended to be.  Adjustment through
increased prices was found in one or two percent of affected establishments,
reductions in store hours in three percent, abolition of free services in
two percent, and reduced advertising in one percent.  Total retail trade
employment declined one quarter of one percent.

In contrast with the above studies which have dealt with particular
industries, Colin D. Campbell and Rosemary G. Campbell have examined the
effect of state minimum wage laws on unemployment by comparing rates of
unemployment in major labor market areas with and without such laws and by
measuring the effect on unemployment when both coverage and minimum wage
rates were increased. 11/  The study used 146 major labor market areas in
42 states (compromising 60% of total United States non-agricultural employ-
ment) in which the Bureau of Employment Security had made bimonthly esti-
mates of unemployment since 1950.  The authors found that "...despite the
higher rates of unemployment in areas with state minimum wage coverage, the

amount of unemployment in major labor market areas with state minimum wage
laws was on the average about 0.8 percentage points above that in areas
without such laws.... The significance of the results of this study is
mainly that they indicate that other programs establishing minimum wage may
also have harmful effects on employment." 12/ Furthermore, it was observed
that when minimum wage rates were increased in 23 instances between 1957 and
1964, 14 such increases resulted in higher unemployment rates and 8 in lower
unemployment rates. An attempt was then made to show that differences in
unemployment between states with and without minimum wage legislation were
not due mainly to other factors. Thus, it was shown that variations in the
percentage of the non-agricultural labor force in manufacturing, changes in
industrial mix and movements of participation rates were not sufficient to
account for any substantial differences in unemployment. Although union
membership was 32.3 percent of persons employed in non-agricultural esta-
blishments in states which had male minimum wage laws as opposed to 27.5
percent in states without any laws, the fact that the unionization rate was
highest in states with 'women only' minima lessens the significance of the
relationship. 13/

Reynolds and Gregory studied the impact of the minimum wage in some 75
Puerto Rican manufacturing industries after World War II. Before describing
their findings it is important to note that in Puerto Rico minimum wages
are typically set at a very high percentage of the regular wage rate.
Furthermore, each industry is usually assigned a specific minimum wage rate
which is tailored to its particular circumstances. Minimum wage rates are
changed frequently, on the average about once every year or two. Thus,
while in the United States minimum wage rates are set across the board at
about 50% of regular average wages and then left unchanged for some 5 years,

in Puerto Rico minima for the various industries are set so high that "44.7% of all the employees in 76 industries were earning exactly the minimum, while 68.5% were within 5 cents of the minimum." 14/ Clearly, any change in the minimum wage rate will directly affect some two-thirds of the workers in those industries.

Since separate minimum wage rates are set for each industry the problem of differential impacts on low-wage and high-wage industries does not arise in Puerto Rico. For both types of industries minimum wage rates constitute a similar percentage of the average wage rate prevailing in that specific industry.

Management's response to minimum wage changes is "to review their production and personnel policies whenever higher minima were impending. At higher and higher wage levels practices which may have been economic at one time were so no longer." 15/ The authors pointed out that raising the minimum wage involved "commonly some shrinkage of the labor force relative to the plant." 16/ They observed, however, that "there is evidence of a marked rise in productivity levels. For the manufacturing sector as a whole, value added by manufacture rose 50% between 1954 and 1958, but employment increased by only 3%, so that the value added per employee rose by 46%." 17/ Based on regression analysis which the authors used to estimate the employment effect resulting from the constantly rising minimum wage rates, they suggest that between 1949 and 1954 "an estimated loss of about 9,000 jobs" was involved compared to "29,000 jobs between 1954 and 1958" in the manufacturing sector only. In conclusion, it is evident that high minimum wage rates in Puerto Rican manufacturing industries have been accompanied by substantial rises in productivity. At the same time, however, industries were able to absorb far fewer new workers than would have occurred without such high minimum wage rates.

## 3.3  UNITED STATES FEDERAL MINIMUM WAGE STUDIES

After the enactment of the Fair Labor Standards Act in 1938 (henceforth called FLSA), the first federal minimum wage law in the United States, the Department of Labor conducted several studies of industries which seemed to be particularly affected by the twenty-five cent minimum.

A classic case which is often cited as evidence of a negative employ-ment effect was that of the pecan shellers of San Antonio, Texas.  18/ There the minimum wage is believed to have provided the principal  impetus for the mechanization of the industry, resulting in the discharge of several thousand employees.

Perhaps the most extensive study on the aftermath of the FLSA was con-ducted by Hinrichs and Douty on the seamless hosiery industry. 19/ Hinrichs attempted to determine the effect of the 25 cent minimum wage,  effective October 24, 1938, on employment in the low-wage  seamless  hosiery  mills between October 1938 and September 1939.  This industry was characterized by firms paying a wide range of wage rates. He divided  his  sample  into high-wage and low-wage groups.  The low-wage group was then subdivided into three groups:  Group I with earnings of less than 25 cents an hour, group II with earnings between 25 and 27.5 cents an hour and group III with earn-ings between 29 and 32.5 cents an hour.  Hinrichs came  to  the  following conclusions:

- Plant fatalities were no higher than in the two years preceding the
  minimum wage enactment.
- The wage differentials among plants were sharply narrowed.
- For the 76 firms sampled there was a 15.7 percent increase  in  the
  number of man-hours worked in the first 9 months of 1939,  compared

with 1938. The group I firms registered a 12 percent decline in man-hours compared to the previous year. It was pointed out, however, that employment in group I firms had been declining between 1937 and 1938 before the Act went into effect. Hence, it is difficult to attribute the entire employment effect to the minimum wage.

- Firms paying relatively low wages were also using obsolete equipment. When they installed automatic machinery employment and man-hours declined while the volume of business remained virtually unchanged.

From this Hinrichs concluded that although the minimum wage subjected the low-wage firms to increased competitive pressure and some loss of business, there was no evidence that they were forced to cease operations. In addition, there were some cases where the adoption of new techniques increased the productivity of labor and lowered total labor costs. The alleged hardships to inefficient firms were therefore felt to be ill-founded.

Douty evaluated the seamless hosiery industry after the minimum wage was raised from 25 cents in 1938 to $32\frac{1}{2}$ cents in 1940. He observed that the distribution of wages was heavily weighted around the minimum wage level. However, there was a readjustment of differentials above the minimum wage which Douty regarded as an indirect effect of the new minimum. Clauses in government contracts requiring specific types of workers and selective layoffs were believed to be partly responsible for the upward shift of the distribution over its entire range. His sample showed that the low-wage firms had the highest percentage increases in wage costs over the 1938-40 period. While there was an overall decline in employment of 2.9 percent for the industry as a whole, employment of firms previously paying more than the minimum-wage level rose. The decline in employment for sub-minimum firms was about 15%.

Douty emphasized that employment changes were affected not only by the minimum wage but by increases in managerial efficiency and the introduction of automatic equipment. He was inclined to believe that the minimum wage may have accelerated the trend towards more efficient operations of the firms in the industry. As to the impact of the minimum wage by region for this industry Douty felt that it was stronger in the South where wages rose by 21.4 percent between 1938-40 than in the North, where they rose by 7.5 percent. The average increase in the country as a whole amounted to 17.7 percent.

Moloney 20/ analyzed several Department of Labor surveys and concluded that the effects of the minimum wage were uncertain. He noted, however, that the structure of Southern industry differs from that of other regions principally in the high number of industries employing a relatively large proportion of unskilled employees. Thus, he surmised, the impact of the minimum wage will be greater in this region. He also believed that wage differentials within plants will be reduced as a result of the minimum wage, managerial techniques improved and labor-saving equipment installed. In some instances, per-unit costs were observed to decline. Due to the then rising volume of production, he could not say definitely to what degree declines in employment might be expected to occur. It was evident that the consequences of wartime production made the estimation of long-run effects nearly impossible.

The federal minimum wage was raised to 40 cents during the war but no studies were made. Post-war inflation prompted a further increase to 75 cents in 1950.

Kantor recorded some tentative results of an incomplete study conducted after the 75 cents minimum went into effect. 21/ Unfortunately, the advent of the Korean war emergency resulted in surveys which reflected the unusual circumstances inherent in an economy buoyed by substantial war production. At that time the United States Department of Labor initiated five studies, each focusing on some particular aspect of the economy, as follows: a) parti- cular industries, b) six communities, c) one hundred establishments, d) a number of firms experiencing difficult adjustments, and e) six hundred laid-off workers. In these studies it was found that:

- Pay differentials between low and high-wage portions within such indus- tries narrowed. Wage increases were not confined to those below the minimum. Non-covered firms also showed signs of wage increases.
- There were few non-wage changes, i.e. few layoffs, changes in unemploy- ment, reduction in hours worked and little increase in capital expendi- tures.
- Although 'marginal' firms had some initial problems which resulted in decreased employment and/or hours, most adjusted to the new wage level. However, such marginal firms were experiencing difficulty prior to the change in the minimum rate.

Walker and Douty have analyzed wage structure changes between the fall of 1949 and March 1950, arising from the introduction of the 75 cent mini- mum wage. 22/ As expected, the immediate result of the minimum wage was a narrowing not only of the total wage structure but of occupational differ entials as well with a large proportion of workers earning the minimum wage or slightly more. Their study focused on Southern sawmills, an industry employing a high percentage of workers at less than the 75 cent minimum. The following table displays the shifts in the distribution of wages: 23/

| Average hourly earnings | Percentage of all workers | |
|---|---|---|
| | Fall 1949 (before MW) | March 1950 (after MW) |
| under 75 cents | 69.2 | 8.2 |
| 75 - 79.9 cents | 11.0 | 66.3 |
| 80 - 99.9 cents | 11.4 | 16.0 |
| 100 cents or more | 8.4 | 9.5 |
| | 100.0 | 100.0 |

In order to assess the impact of the minimum wage on various subregions within the South the states were divided into three groups: 1) southeast, 2) southwest, and 3) border states. The computations revealed that the average level of wage rates had risen 13 cents an hour in the southeast, 7 cents in the southwest, and a mere 4 cents in the border states. Similarly, wage differentials between states narrowed so that the pre-1950 range of 19 cents (61 cents in Alabama vs. 80 cents in West Virginia) was reduced to 14 cents. After March 1950 twelve of thirteen states surveyed fell into a 6 cent range.

Douty and Walker also attempted to analyze the non-wage effects in Southern sawmills resulting from a minimum wage. However, the 1950 construction boom rendered it impossible to distinguish between price increases due to the minimum wage and those resulting from a rise in aggregate demand. They observed that between the fall of 1949 and March 1950 employment declined by two percent while the firm mortality rate was between one and two percent. The authors concluded that the above figures were insufficient, and probably insignificant from a statistical point of view, to reach substantive conclusions. Nevertheless, they noted that a larger number of

firms were in operation in 1950 than in 1949 which seemingly contradicted the notion that the minimum wage was responsible for plant closures. It is possible that mechanization, which had been increasing for some time, may have been speeded up by the new minimum, at least in firms large enough to make such mechanization practicable.

Peterson challenged the conclusions of the United States Department of Labor that employment changed only slightly immediately following the imposition of minimum wage changes under the FLSA. 24/ He felt such con- clusions resulted from the fact that the minima had generally been low compared to the prevailing wages and that they were frequently enacted shortly before upturns in economic activity due to war or the possibility of war. Furthermore, the use of highly aggregative data in most (Bureau of Labor Statistics) studies has tended to hide regional, occupational, and industrial variations in the impact of the minima. It was Peterson's view that the data used by the United States Department of Labor were inadequate to detect employment effects, and that cross-section comparisons using BLS data, in conjunction with supplementary data, indicate negative employment effects. He re-examined the figures used in the BLS studies, as well as some unpublished supplementary data in his cross-section analysis. The three industries surveyed were southern sawmills, men's cotton garments, and seamless hosiery. By grouping these industries by wage levels and by region, he showed that there was an inverse relationship between wages and employment.

The next increase under the FLSA took place in 1956, raising the mini- mum wage to $1.00. The 5 separate studies which the Department of Labor conducted then were variants of those planned in 1950 (see above for

discussion). Samuels, one of the Department's researchers, studied seven industries where wage levels were believed to be most affected by the increase in the minimum wage which went into effect in March 1956. 25/ He compared the wage structures of those industries as of August 1955, February 1956 and April 1956 dates representing, respectively, the date of the passage of the law, one month prior to the effective date, and one month after the effective date Samuels found that the initial impact of the $1.00 minimum on the earnings distribution showed that "...the increase in the minimum wage from 75 cents to $1.00 an hour resulted in, a) a sharp compression of the earnings distribution of the work force, and b) a higher percentage of workers at the minimum." 26/

Furthermore, wage differences between regions, among industries, and between relatively high-paid office workers and relatively low paid production workers were reduced. He concluded that "the indications are that in most instances the $1.00 minimum exerted pressure against prevailing economic and institutional factors so that the increases were, in the main, only those required by the law." 27/ The employment effect in Samuels' study, as in the previous Bureau of Labor Statistics surveys, was minor. Thus, the number of plants fell by two percent and employment by four percent between 1955 and 1956. Furthermore, the increased minimum had no apparent effect on supplementary wage benefits such as vacations, holidays, health insurance and pension plans.

In the latter part of his study Samuels tried to assess the indirect effects (i.e. changes in the wage rates of workers not directly affected by the minimum wage of the minimum wage. He noted that there were four possible ways in which adjustments within the wage structure might be

accomplished: a) to raise the wage of workers earning less than the $1.00 minimum to the new minimum level, thereby reducing both money and percentage wage differences between the lowest-paid workers and all the other workers in the labor force; b) to grant the same money rate increase given to below-minimum-wage workers to all workers, thus maintaining money differentials; c) all workers could be given the same percentage increase thereby increasing money differentials but maintaining percentage spreads; or d) any combination of a, b, and c. Samuels found that all four types of adjustments were being made. He attributed the existence of particular patterns to special conditions in each industry. The only general feature which emerged was that up to a point the larger the percentage of workers below the minimum, the less was the narrowing of differences between occupations. Where almost all of the workers were of uniform (low) skill, the concept of maintaining wage differences tended to lose its meaning.

Samuels also studied the extent to which non-wage actions were used to offset higher wage costs as a result of the $1.00 minimum wage in the United States in 1956. 28/ He found that the main area of adjustment was an improvement in machinery and equipment facilities. Any discharge of workers was attributed to low productivity and inability to meet new production standards. Changes in plant layout were reported by over 20 percent of the plants, increased production standards by 10 percent, and changes in the product line by 7 percent. It is perhaps significant that such changes were attributed to the minimum wage "in only a minority of cases." 29/ Furthermore, there seemed to be little correlation between type of industry and proportion of plants making the adjustments. Neither was there any consistent relationship between the above changes and the proportion of workers earning less than the new minimum. Finally, about the same proportion of plants in each size group took one or more of the actions described above.

Badenhoop's study focused on the impact of the minimum wage increase of 1956 to $1.00 with regard to seven selected communities, mainly located in the South. 30/ The emphasis in this study was not only on wage and employment changes in covered (coming under the law's provision) industries, but also on the relationship between covered and non-covered industries. Badenhoop concluded that the immediate effect of the increased minimum was felt only in covered firms whose average wage levels were increased and whose wage structure was narrowed, resulting in a high concentration of workers earning the minimum wage or slightly more. Also, it was observed that 12 months after the enactment of the minimum wage increase average pay levels in uncovered firms had risen relatively more than in covered firms, while for the period stretching from immediately before the minimum wage enactment to 12 months after, covered industries had shown higher relative wage increases. Badenhoop also noted an overall narrowing of occupational differentials in covered firms. Skilled workers did receive increases over the period in question but they were insufficient to restore either the absolute or the relative wage differentials which existed prior to the minimum wage increase. In non-covered industries there was little change in the distribution of earnings. Longer work weeks were found in non-covered firms in all areas. Covered firms frequently reduced hours or gave more attention to work flow in order to minimize overtime. Moreover, some employers were offsetting increased wage costs by setting higher production standards, making hiring and layoff more stringent, stream-lining plant lay out, redesigning products, and installing labor-saving equipment. No attempts were made to quantify these actions but most employers covered by the minimum wage provisions indicated that adjustments were made to the minimum wage rate without discharging workers.

A study by Schaffer analyzed the wage structure in six cities where the proportion of workers earning less than the new minimum wage rate was viewed as substantial for both covered and non-covered firms in various types of industries. 31/ Such cities were located mainly in the South. It was noted that there existed a considerable range in size of city, size of plant, and composition of the work force. Data were gathered for four payroll periods: February 1956, April 1956, April 1957 and June 1959. The minimum wage increase became law in March 1956. The initial effect of the law was to raise the average pay levels in the covered industries and to widen the differentials between covered and non-covered firms. By April 1957, this relationship had narrowed slightly or remained stable. Over the entire 40-month period percentage increases in covered industries exceeded those in non-covered industries, especially where average hourly earnings were lowest. In April 1956 immediately after the minimum wage-hike, the distribution of individual earnings in covered industries was highly concentrated at the $1.00 level. Figures for a year later showed little change from this distribution. In non-covered industries little change was noted between April 1957 and June 1959. Occupational differentials between skilled and unskilled workers, however, narrowed immediately after passage of the minimum wage increase and remained so in five of the six cities studied. 32/

Douty concurred with previous studies which had found an initial compression of interpersonal and occupational wage structures, followed by a partial restoration over a period of about one year. 33/ Within some industries which had both covered and uncovered workers, the minimum wage seemed to have the effect of raising the wage levels of both types of workers, especially where the proportion of covered workers was high. Douty found it difficult to discern employment effects resulting from the minimum

wage and those which were due to other factors. He pointed out, however, that "employment one year after the effective date was lower than in the pre-$1.00 period in all except two of the industries, the declines ranging from 3.2 percent to more than 15 percent. Nominal increases were registered in two industries. When the plants in industries studied were classified by degree of impact of the minimum wage, there was a distinct tendency for employment to decline more or to increase less in those plants where the impact was 'high' than where it was 'low'. 34/

Douty qualified his findings by stating that employment may reflect factors other than the minimum wage. Often employment changes took forms other than simple discharges. Such variations included failure to replace workers, setting higher standards in hiring new workers, raising production standards and the implementation of more efficient work procedures. Douty concluded that "precise statistical measurement of the employment effects of a minimum wage is virtually impossible in view of the diverse nature of the forces affecting output and employment that impinge on particular indus- tries. Moreover, the full adjustment may well take a considerable period of time, since the short-run demand for labor appears to be relatively inelastic." 35/

Kaun cited the extensive speculation on the subject of alterations in production techniques caused by minimum wage changes. 36/ He then pro- posed to put such changes to an empirical test, using the following hypo- thesis:

> Within (and among) the low-wage industries, those firms (industries)
> which are affected - required to increase wages - to the greatest
> extent by the wage legislation, will, ceteris paribus, have the
> greatest incentive to substitute non-wage inputs in the production
> process  This does not necessarily imply a shift to less labour

i.e. intensive methods of production. For example, if capital costs increased more than labor costs for the industry, or industries as a whole, the shift would be expected to be toward labor inputs. In this case, the shift toward labor should be less for the firms or industries most affected by the minimum wage. 37/

From the census data Kaun then took wages per man-hour (W/MH) and value added less wages per man hour /(VA-W)/MH7 in 19 low-wage industries for 1947 and 1954. W/MH in 1947 was a proxy measure of the effects of the minimum wage and (VA - W)/MH was a measure of non-wage inputs. Kaun believed that if the minimum wage had an impact on relative factor inputs, the percentage increase in (VA - W)/MH would be related to the wage level at the beginning of the period studied. Using rank correlation of the two variables, he found that for all manufacturing the higher the wage-rate in 1947 the greater the subsequent increase in non-wage inputs. For the 'low-wage' industries he found that those with the lowest wage levels in 1947 (those which were presumably more adversely affected by the 1950 minimum wage increase) "there appears to be a significant positive correlation between the level of the wage (ranking low to high) within the industry in 1947 and the subsequent relative decline in wage inputs in value added." 38/ Kaun also felt that the minimum wage had a higher impact on the smaller firms within the low-wage sectors of the industries studied, noting that proprietorships and partnerships had consistently applied lower wage scales and hence are more sensitive to minimum wage changes.

M.A. Malik analyzed the effects of minimum wage provisions in the United States from 1955 to 1957 in order to determine whether a negative employment effect may be observed. 39/ After having selected 12 low-wage industries he found that 11 registered employment declines. For 5 out of the 11 industries he concluded that such declines were due to the minimum wage

increase to $1.00 while for the remaining six the decrease in employment was attributed to either long run trends in employment or to other changes which affected all firms in the industry, not just those experiencing a relatively large wage impact. (Classification according to impact was based on the percentage increase in wage costs necessitated by the new minimum. Malik showed that the higher the impact, the greater was the decline in unemploy-ment). One of the 11 employment declines was attributed to governmental restrictions in the supply of the product.

Besides employment reductions Malik observed that employers reduced costs through increased expenditures on plant and equipment by raising production standards and by tightening hiring policies. Cost reduction was also facilitated by changing plant layout and product lines.

### 3.31  Minimum Wage Analysis by Region

Aside from the broad studies on industry groups several studies have examined the effects of the 1956 minimum in specific regions of the country.

Brinker compared 110 affected and 26 non-affected firms in 15 Oklahoma industries. 40/ Using the third quarter of 1955 as his base period and measuring changes against the same period one year later, he observed that the 136 firms reacted as follows to the wage rate changes: 48 increased out-put, 50 increased prices, 21 reduced overtime, 34 increased mechanization and 24 introduced more efficient productive practices. (Note: any one firm may have followed more than one course of action). Brinker showed that a higher percentage of affected firms took such measures than non-affected ones. In both types of firms, however, employment declined somewhat.

In his study of high and low-wage counties in Florida, Colberg 41/ felt

that the motives for minimum wage legislation were largely political, laden

with justifications whose nature amounted to "economic sophistry."  As

applied to manufacturing he believed that minimum wages are a device for

waging regional economic warfare.  Northern manufacturers favored such laws

since they rendered it more difficult for capital to flow to (southern)

regions where labor costs were lower.  Labor unions favored them since they

improved their bargaining position by raising the costs of unorganized

"wage-chiselers."  The result, he felt, was a slowdown of economic growth

in low-wage areas.  42/

Colberg critized Department of Labor studies for emphasizing mainly

intra-industry effects in high-wage and low-wage plants and glossing over

regional effects.  He suggested that the results tended to understate the

employment effect since total employment rather than total man-hours were

measured  thereby giving short shrift to items such as overtime work.  His

study was based on a survey (by high-wage and low-wage counties) of wage

and employment changes from January 1956 to April 1956.  It admitted the

statistical difficulty of separating the effect of the federal minimum wage,

which went into effect in March, from the strong increase in demand over

the same time period.  The fact that during this period employment rises

occurred in high-wage areas, while at the same time substantial migration

out of low-wage areas took place, seemed to indicate a lack of employment

opportunities in low-wage areas.

The impact of the higher minimum wage on employment was demonstrated

by the larger percentage increase in average straight-time hourly wages for

low-wage than for high-wage counties .  It amounted to 16.4 percent in the

former areas and 2.9 percent for the latter. Likewise, low-wage areas experienced larger declines in both straight time and overtime man-hours of employment. These results are shown in the following table: 43/

Percentage changes in man-hours of employment
for production workers

|  | Straight-time | | Overtime | | Total | |
| --- | --- | --- | --- | --- | --- | --- |
|  | Low-wage counties | High-wage counties | Low-wage counties | High-wage counties | Low-wage counties | High-wage counties |
| Jan-Apr. 1956 | -13.8 | -8.7 | -39.0 | 7.1 | -15.2 | -7.9 |
| Jan. 1956 & 57 | - 1.4 | 3.5 | 15.0 | 33.6 | - 0.5 | 5.1 |

Colberg also tried to determine whether the magnitude of the wage increase within low-wage counties was inversely reflected in a similarly large negative employment effect. Based on a county-by-county regression analysis he observed that "the counties in which the wage rate was raised by the largest percentage encountered the largest declines in manufacturing employment.... (Thus) a one percent greater increase in the average wage was associated with nearly a one percent greater loss in man-hours of employment." 44/ Furthermore, he concluded "that a high-wage county which was not affected at all by the new $1.00 minimum would have an employment decline of about 6 percent between January and April." 45/ His observations were reinforced by unemployment figures and migration patterns. As a result, Colberg saw the minimum wage as running at cross-purposes with attempts of the Florida Development Commission to encourage employment and industrial development in these low-wage areas.

Macesich examined the question of whether absolute wage differentials were restored after the 1956 federal minimum wage. 46/ According to economic theory, differentials result from 1) non-wage factors which affect

the attractiveness of occupations, 2) barriers to entry into the occupation and 3) incomplete adjustments in demand and supply for particular types of labor. To estimate the total effect of such factors, Macesich used average hourly earnings in given occupations as an indicator of the price of labor and fitted a weighted regression equation for each industry. He found that fourteen out of sixteen regression coefficients were negative. Thus, he rejected the hypothesis that there was no compression of wage differentials and concluded that such differentials differed in the period 'before' and 'after' the introduction of new wage minima

C.St.J. O'Herlihy, in a study for the International Labor Office, measured the impact of the minimum wage on selected low-wage industries and areas and the effect on community welfare. He showed that from 1949 to 1964 the percentage increase in the average hourly wage attributable to years in which the level of the minimum was raised was greater for low-wage sectors than for all industries and areas. Thus he surmised that "changes in the minimum wage have significantly affected average hourly earnings in low-wage industries and states in the United States." 47/

Next, O'Herlihy used step-wise regression methods to explain year-to-year changes in variables such as average hourly earnings of production workers, the wholesale price of industry output, the volume of industry output, labor input measured in man-hours worked, and the level of total employment. Based on his regressions he concluded that "minimum-wage changes were found to be important in explaining changes in average hourly earnings in those states where the level is low," 48/ and "relative employment growth is greatest in the states with very low levels of average hourly earnings." 49/

In order to assess the minimum wage impact on community welfare
O'Herlihy tried to determine whether certain subgroups of the population
were adversely affected by minimum wage increases. It will be recalled
that some classes of workers — such as the elderly, and some ethnic minor-
ities — are believed to be most sensitive to whatever unemployment may be
caused by a minimum wage. 50/ To measure whether there was a net gain or
loss for such subgroups O'Herlihy tested how the inequality of the subgroup
changes and also whether the average income of the group increased or
decreased. To test the first factor, the Gini Ratio -- which measures the
proportion of the triangular area on a Lorenz diagram above the Lorenz
Curve — was used. Where inequality increased and average real income
decreased, a welfare loss was reported and vice versa. Where the tests
revealed mixed results the welfare effect was labelled 'inconclusive'.
Using this criterion, the author concluded that "of the 60 groups examined,
it was ultimately possible to classify only five, three who could be regard-
ed as benefitting from minimum wage changes and two who fell into the in-
conclusive category." 51/

### 3.4   MINIMUM WAGE STUDIES IN GREAT BRITAIN AND FRANCE

The question of minimum wage regulation and its effects on employment
in Great Britain and France has been the subject of several studies. On
the whole they have focused on the relationship between minimum wage regu-
lation and collective bargaining.

McCormick and Turner traced the effect on wage rates after the setting
up of Wage Boards to regulate wages in various "service occupations in pubs,
hotels, and restaurants in Great Britain." 52/ Since there is no uniform
legal minimum wage in that country, wages are determined either by collective

bargaining in unionized occupations or by special Wage Boards. The function of these boards is to set wages at rates which are generally prevailing. Secondly, such boards are meant, at least implicitly, "to stimulate collective organization of employers and workers, and to prepare the way for a self-supporting system of collective bargaining." 53/

The authors examined the structure and workings of this system in considerable detail. They concluded that the arrangement generally had the effect of raising wages in inefficient firms which were previously being 'subsidized' through low wages. On the other hand, they felt that there was a significant levelling-down of wage rates which were higher than those provided by the wage boards' orders. In summary, there did not seem to be an improvement in wage conditions for the regulated services either relative to organized workers or to other groups under similar systems. If anything, the caterer's position had deteriorated. 54/ This latter fact was probably due to the failure of the wage boards to encourage voluntary collective bargaining. The authors' conclusion, therefore, was that only bargaining by experienced and organized groups could improve working conditions.

Bowlby noted that since World War II the British labor movement has reversed its historical stand of advocating more extensive minimum wage coverage. Whereas minimum wages were once thought to help raise wages to reasonable levels, later statements by members of the Trade Unions Council's General Council seemed to indicate that such measures were aimed at oppressing the working class and weakening the labor movement itself. This change in attitude, the author indicated, could be explained by comparing the movement of wages in regulated industries with wages for industry in

general.  Bowlby felt that "at some time just before, during, or immediately
after World War II, a change took place in the relationship between the
rates of wage increases in industries subject to statutory wage regulation
and in British industry in general.  A considerable body of statistical
evidence was examined to test the hypothesis.  It showed that during the
postwar period a tendency existed for wage increases in the regulated indus-
tries to lag behind wage increases in British industry generally.  This tend-
ency had not manifested itself in the prewar period."  55/

It was Bowlby's belief that this change in attitude towards wage orders
was due to an institutional factor, namely the composition of the wage
boards.  These boards include representatives of management and labor, as
well as 'independent' or 'neutral' members.  Assuming that labor pressured
for higher wages, while management advocated small wage increases, the view
of the 'neutral' board members was decisive.  It was pointed out that prior
to World War II sympathy for the worker as a member of a class 'exploited'
by employers was common.  Thus wage increases more often than not reflected
this view.  'Independent' members may have favored labor out of a sense of
justice or for other humanitarian reasons.  However, a change in attitude
occurred soon after the war when the Labour Party, believed to be the polit-
ical arm of the labor movement, won at the polls on a platform incorporating
numerous advantages for the workers.  Contemplating the wage-price spiral,
a sizeable part of the public asked for protection of the 'public interest',
i.e. for wage restraint.  This demand, of course, coincided more nearly with
the employer than the worker view.

Janet Yung discussed the economics of a minimum wage and its relation-
ship to the industrial wage structure.  56/  Specifically, she attempted to

determine whether or not minimum wage laws in Britain and the United States
had narrowed the relative wage differential between low-wage and  high-wage
industries.  Although there was evidence to show that the immediate  effect
of minimum wage laws was to narrow the inter-industry wage  differentials,
such differentials seemed to increase over a longer time period.  Yung
rejected the notion by Bowlby that minimum wage laws handicapped  low-wage
groups since it neglected other possible causes of wage changes.  She  con-
cluded from her studies that high-wage sectors of the economy usually  led
wage movements in industry whereas low-wage sectors lag behind.  It is sig-
nificant that firms in the high-wage sector tend to be larger, more profit-
able and more highly unionized than firms in the low-wage sector.   Thus,
"facilitating environmental circumstances" rather than minimum wage  laws
themselves were, according to Yung, largely responsible for increasing dif-
ferentials between sectors.

Eastman's examination of wage structures at the time  of  the  French
minimum wage law of 1950 revealed geographical differentials ranging  from
64 francs an hour in the lowest wage zone to 78 francs an  hour  in  the
Parisian zone—a differential of 18 percent.  The rate (in Paris) was raised
to 87 francs in March 1951 and to 100 francs in Sept. 1951.  57/  In  mid-
1952 the minimum was tied to the cost of living index and zone differentials
were narrowed to a maximum of 15 francs in March 1951, with a further over-
all reduction of 25 percent in June.  Immediately after the introduction of
the minimum wage law, wage rates for skilled labor were increased although
such increases were proportionately less than of unskilled labor.  These
increases were partly the result of general price rises.

There was no unemployment increase in the period following the minimum wage enactment. On the contrary, employment increased along with prices and wages. The result was that by March 1951, when the minimum was increased, prices had risen 12 percent from the August 1950 level and the skilled-unskilled differential was almost wholly restored. According to Eastman "the increase in the minimum wage was interpreted as the signal for a general wage increase. Employers applied to all their workers the same percentage increase in wages as they gave their unskilled laborers....After the March 1951 increase in the minimum wage, occupational wage differentials did not contract, for all wages rose together... Thus the minimum wage, fixed in terms of money, became in effect a numeraire, placing a lower limit on other prices." 58/

## 3.5 SUMMARY OF VARIABLES EXAMINED IN MINIMUM WAGE STUDIES

From the preceding discussion of past empirical studies of the effects generated by minimum wage laws it is readily seen that many of the same variables have figured prominently in the research of different economists. By way of summary, we shall now review the variables which received the most attention. They are: the effects on the wage structure, on employment, and on factor substitution.

One variable which has been prominent in studies by the United States Department of Labor and which can be readily tabulated is the change in the wage structure. Concomitant with this are changes in cost to the firms, although this aspect and its consequences have not been given as much attention as might be expected.

Douty found that the distribution of wages in the seamless hosiery industry, after the passage of the FLSA in 1938, centered on the minimum wage level. However, a partial restoration of the differentials above the minimum wage level took place, partly a result of selective layoffs and government contracts.

Walker and Douty, in their 1950 study of southern sawmills, noticed a narrowing of occupational wage differentials as well as a compression of the range in average wage levels between states.

In Samuels's study of seven industries after the 1956 increase in the minimum wage level to $1.00 it was found that, in general, the larger the number of workers previously below the minimum wage level in an industry, the less was the narrowing of differences between occupations in that industry. Depending on special conditions in each industry, adjustments varied from no wage increases beyond those legally required to maintenance of absolute differentials or to maintenance of percentage differentials.

Badenhoop focused on the relationship between average wage rates in covered and non-covered firms after the 1956 minimum wage increase. He observed a lagged increase of wage rates in non-covered firms although the magnitude of such an increase was less than that for covered firms. In the latter firms wage differentials for the various skills were not wholly restored whereas in non-covered firms the increase in average wage rates did not alter skill differentials. Schaffer's study of six cities showed similar results although there was still a high concentration at the minimum after one year.

British and French studies have concentrated typically on the relation-
ship between the regulated (minimum wage) sectors of the labor force and the
unionized sector. McCormick and Turner believed that the wage boards' deter-
minations of minimum wage rates served in the long run to raise wages in
previously low-wage firms and to depress rates that were higher than the
minimum wage level.

Bowlby observed that the British labor movement had turned from advoca-
ting minimum wage laws, generally administered by wage boards, to increased
reliance on collective bargaining. This change was believed to have been
the result of a change in attitude towards the 'public interest'.

Yung disputed Bowlby's observation noting that for both Britain and the
United States, high-wage industries were more concentrated, more profitable,
and more highly unionized than low-wage industries. It was these "facilitat-
ing environmental circumstances" rather than minimum wages themselves which
caused wage increases in low-wage industries to be smaller and to lag.

Eastmen described the institutional factors in France causing wage
differentials to remain unchanged. Thus the level of the minimum wage was
linked to the consumer price index, with employers raising wages promptly
in proportion to minimum wage increases.

The level of unemployment is probably the variable which has prompted
the most research and discussion for obvious reasons. With the exception
of some dramatic cases, such as that of the pecan shellers in Texas in 1938
referred to earlier in this chapter, the relationship between minimum wage
levels and unemployment has been unclear. Thus far, it seems that the
studies prepared by United States Government agencies generally found

either no noticeable or only mild negative employment effects.  This holds
true for the early studies completed on state minimum wage by the Women's
Bureau and for the study by the New York State Department of Labor in 1958.
In two of the three cases involved in the Peterson-Lester debate, the busi-
ness cycle was cited as a major factor in mitigating or exacerbating the
minimum wage level's influence on employment.

Maloney's survey of the cottonseed, hosiery, and lumber industries—
undertaken after the 25 cent minimum under the Fair Labor Standards Act
in 1938—suggested that the rising volume of production at the time of the
Act's passage precluded any definite analysis of the employment effect of
the minimum wage.  The six separate studies initiated after the increase to
75 cents in 1950 were limited in their validity by the influence of the
Korean War which tended to distort somewhat output, prices, and employment.
In two cases, seamless hosiery and southern sawmills, adverse employment
effects were noted in the low-wage sectors of each industry.  According to
both Hinrichs's and Douty's 1938 studies of the seamless hosiery industry,
however, these changes were partly the result of increases in managerial
efficiency and long-run technological factors, such as the substitution of
capital for labor.  They felt that a change in employment on the order of
two percent in southern sawmills was probably insignificant statistically,
considering the volatile employment in that industry over time.  Samuels's
survey of seven industries in 1956 showed that almost all of the four percent
overall decrease in employment was attributable to the seamless hosiery and
lumber industries for much the same reasons given in earlier studies.

Research by non-government economists suggests that the inconclusive
nature of several United States Department of Labor studies was due to

insufficient data, undue aggregation and the application of inadequate statistical techniques. Consequently some economists have tried to reinterpret government studies by using more refined methodology and by introducing additional data.

Thus Peterson found that disaggregation and the use of cross-sectional comparisons for the studies conducted by the Women's Bureau in response to the enactment of the FLSA yielded negative employment changes. In arriving at that conclusion he not only took into account absolute changes but also relative changes in employment over time between the various subgroups compared. For the Women's Bureau studies, the cross-sectional analysis was made on the male-female and interstate dimensions while the FLSA studies were done using high-wage vs. low-wage intraindustry and interregional dimensions. Man-hours as well as total employment were used in Peterson's analysis.

Kaun noted that from 1947 to 1954 low-wage firms and industries experienced greater rates of substitution of capital for labor than the high-wage sectors, i.e. the low-wage firms and industries introduced machinery and equipment at a faster rate than high-wage sectors; the latter were, of course, already well endowed with such modern equipment.

Colberg found man-hours for both straight-time and overtime had decreased for low-wage counties relative to high-wage counties in Florida. He further showed that within the low-wage counties the larger the percentage increase necessary to meet the $1.00 minimum the greater the decrease in (straight-time) man-hours of employment.

Campbell and Campbell 11/ explored the relationship between unemployment and State minimum wage in major labor markets in the United States. They found less unemployment in states without such laws. In addition, for those states with minimum wage laws unemployment was generally greater the higher the level of the minimum compared to the average wage rate in the state. Likewise, "relative" unemployment increased on the whole after increases in the minimum.

The third major dependent variable studied has been factor substitution. Although theoretically separable from so-called 'shock effects' on management, it has been difficult to separate the impetus for factor substitution. Increased mechanization and decreased employment often go hand in hand as shown by the pecan-sheller case. This was also true for the low-wage sector of the seamless hosiery industry studied by Hinrichs. Low-wage firms were generally using obsolete machinery. The introduction of the minimum wage caused many firms to change to more advanced methods of operation already in use by higher-wage firms.

After the 1956 minimum increase to $1.00, Samuels's poll of firms showed that various plant adjustments were made. Improvements in machinery and equipment facilities were the main areas of adjustment, yet only in a minority of cases was the minimum cited as the impetus for such changes. Brinker , on the other hand, found that affected firms in 15 Oklahoma industries were more inclined to increase mechanization and to make other adjustments than were non-affected firms.

Other variables mentioned in the empirical studies cited were a) regional impact, b) output and c) price. The regional incidence of the Act has been important in the United States since wage levels have

historically been lower in the South.  Output and price changes have not been given very much attention.  In part this has been because past minima were implemented during periods of generally rising output and prices.

## 3.6  CRITIQUE OF EMPIRICAL STUDIES

As indicated earlier, one of the chief problems in the empirical studies of minimum wage phenomena has been to isolate the effects of the various variables when other forces were at work at the same time.  Several attempts have been made to point out exactly the methodological flaws and their consequences in past studies.

Jean Wells has made a comprehensive chronological study of all the statistical reports made on the minimum wage in the United States from the Oregon State study in the retail store industry of 1914 to the Bureau of Labor Statistics studies done on the 75 cent minimum of 1950.  59/ Reviewing the studies that were completed she became highly critical of the limited view taken by many of the people involved in the collection of data.  Such data, she believed, were often of very limited usefulness.  She considered two studies to be superior to any of the other, specifically the Oregon State study of 1914 and the Seamless Hosiery studies of the 1938 to 1940 period.  Both were more comprehensive in attempting to locate effects and had been conducted at a time when the business cycle was not on the upswing, thus avoiding the problem whereby minimum wage effects were wiped out by other influences, such as substantial price rises and others.  She concluded that since very little had been substantiated about the effects of minimum wages there was no need to discontinue the legislation until definite conclusions could be reached.

Macesich and Stewart dealt with the studies by the United States Labor Department on effects of the $1.00 minimum wage. 60/ After summarizing these studies, they examined a number of their limitations and concluded that, although these studies represented an improvement over previous ones, they suffered from the same conceptual and methodological flaws of earlier work. The studies neither paid adequate attention to isolating the minimum wage effects from other important influences nor did they measure all the influences of the minimum wage on employment. There was little explicit recognition of changes in demand within and among industries and regions. Neither were differences in elasticity of demand and elasticity of factor substitution considered. More specifically, these studies were felt to be deficient on account of the following items:

- They did not take into account long-run trends independent of the minimum wage.
- The base period used for measuring the changes was not the same for all industries surveyed. Seasonal factors may have been present and such cyclical elements were likely to be different for each industry.
- Although cross-sectional analysis based on high, medium, and low impact groups was used, there were no classifications based on total man-hours or on firms entering or leaving the industry.
- The 'matched sample' technique adopted was subject to sampling variability, yet there was no discussion of standard errors. Thus, there was a bias in an unknown direction in the measurement of employment due to the entry and exit of firms from the industry and the shift from covered to non-covered groups.
- Employment estimates were likely to be inaccurate. Aside from the use of the number of workers rather than man-hours as a gauge of employment,

there seemed to be several different approaches to measuring unemploy-
ment. Estimates differed depending on whether the 'matched sample'
figures, separate industry figures or 'follow-up' figures were taken.

Peterson was critical of much of the past research in the field of
minimum wage legislation. 61/ His criticism was that in spite of the
numerous studies undertaken much was untrustworthy on account of the serious
methodological flaws they contain. There were seven separate effects which
he isolated and showed how research into each has been less than satisfact-
ory.

1) Wage effects: The previous studies have not accounted for, or identi-
   fied, or separated, all the possible factors influencing wages includ-
   ing secular trends. Factors which distort the actual (average) wage
   costs are the elimination of the lowest-paid workers, the maintenance
   of pay differentials, and wage increases in plants not greatly affected
   by the minimum.

2) Employment effects: Criticism was directed at the confusion over termi-
   nology. Man-hours, not just total employment, should have been the
   relevant yardstick, and the size of the employment effects ought to
   have been related to the size of wage effects. Where data did not
   permit specification of effects, it should have been pointed out that
   there was "no conclusion" rather than "no effect".

   The confusion over terminology has led to further flaws in methodology.
   Aggregate national indicators may not have revealed anything unless
   wage increases were substantial. Interindustry and interregional
   studies may be invalid due to different market and technological con-
   ditions. The most useful approach is through intraindustry cross-

sectional comparisons. However, government studies of this sort have emphasized totals or averages which tended to bias the studies toward large plant behavior and neglect the entire range of behavior patterns.

3) Efficiency effects: Increases in worker efficiency resulting from better nutrition and health are probably not very relevant today. Variants of this argument which state that elimination of the most inefficient workers and the increased efficiency of those remaining will reinforce the social benefits of wage gains, have never been sub-stantiated. Improved managerial efficiency and the installation of labor-saving machinery were frequently cited as resulting from minimum wage enactments. It is debatable whether the "net labor savings fully offset the wage cost increase imposed by the minimum. The factor substitution implications of orthodox theory simply are ignored or are too narrowly interpreted." 62/ Moreover, managerial actions may occur in the absence of the minimum.

4) Market effects: They include effects on product prices, output, and the number of firms. Price effects may be impossible to determine in industries with numerous and/or differentiated products and many firms. Where wage increases are a small part of total costs, the influence of price increases on demand may be small, especially where product demand is highly inelastic. Little research has been done on output reductions due to increased costs or prices. Hence questions such as the possibility of shifts by consumers to other products, of cost increases being shifted back to suppliers, or of changes in industry structure to avoid applicability of the minimum wage law, remain unanswered.

5) <u>Payroll, Profit and Spending effects</u>: Some students of minimum wage laws have felt that increases in aggregate demand may result from the redistribution of income from profits to consumption due to the apparently higher propensity to consume by workers than by persons earning profits. This idea rests on the unproven notion that the demand for labor is inelastic and that increased payroll costs do not result from price increases.

　　　　To the extent that some low-wage workers are secondary wage earners in families whose incomes go into savings rather than consumption, the extent of the increase in aggregate demand will be limited. Whatever effects on aggregate demand occur may be offset by inflation unless there is some excess capacity.

6) <u>Community and Regional effects</u>: Employment restrictions have affected low-income areas most heavily. Thus, contrary to the local monopsony argument often advanced, total wage payments may decrease in such areas. Government encouragement of investment in these areas may well be inconsistent with minimum wage laws which have an opposite effect.

7) <u>Income Distribution effects</u>: On the whole, research on minimum wage has ignored the fact that there may not be any correlation between hourly wage rates and family incomes. Furthermore, where the effect of the minimum in covered areas may be to depress conditions in uncovered areas, the share of income going to the extremely low groups may be less than before. Another possibility is that the distribution may work against low-wage workers, firms and regions to the extent that unaffected high-wage groups gain a relative competitive advantage.

Kaun agreed with the criticisms raised by Macesich, Stewart and Peterson and offered two further criticisms. 63/ First, he argued that there has been too little attention paid to effects on the composition of the working force. He believed that minimum wage affected employment of certain classes of labor more than others. Second, he objected that there had been no real attempt to measure the long-range effects of minimum wage. Department of Labor studies have covered at most a year or two. Measurement was made at discrete intervals during these periods. Such short-range studies may be biased since they ignore the fluctuations in the level of economic activity during the period studied.

Kaun's own approach to the question of factor substitution due to increases in the level of the minimum wage has recently been questioned by Cornelia L. Motheral. 64/ In particular, she questioned his use of value added minus wages per man-hour as an index of "non-wage" inputs. First, it is not a pure measure since value added is itself a residual and subtracting wages from it yields another residual. Second, its usefulness in making interindustry comparisons was limited by the necessary (implicit) assumption that the industry impact of the business cycles for the relevant periods was uniform (which she claims was not). Third, she felt that historical move-ments in value-added were closer to variations in "profit-type income" than in non-wage inputs as measured by capital consumption allowances. Fourth, in four out of six low-wage industries studied by Kaun, capital consumption as a share of total product increased less than in total manufacturing. Another criticism was Kaun's association of declines in the individual and partnership (marginal) sectors of the low-wage industries with minimum wage increases. Since only three of the six low-wage industries conformed to this hypothesis the validity of his assertion was doubted. Furthermore, Motheral

asserted that Kaun ignored the demand side in attributing long-run declines in proprietorships and partnerships to minimum wage. To establish such a relationship would require that intraindustry declines be greater in low-wage industries than in high-wage industries.

In this chapter many of the better known minimum wage studies have been presented and reviewed. The reader may well have concluded that much disagreement still persists as to the magnitude of some of the minimum wage effects, notably on employment, the narrowing of the wage structure, direct and indirect labor costs and the impact on groups who constitute the fringe of the labor force, i.e. the low-skilled, teenagers, and the elderly. In the following chapter some of the major issues—both theoretical as discussed in chapter I and empirical as reviewed in chapter III—will be analyzed. The nature of the data made available to us on the federal minimum wage imposed considerable constraints on the scope of the analysis which we were able to make. Three hypotheses will be tested involving an examination of the impact of the minimum wage on low-wage areas and industries; the magnitude of the narrowing of the wage distribution with respect to the number of workers earning less than the minimum wage level; and the differences in impact on male vs. female and office vs. non-office earnings differentials.

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CHAPTER IV

THE IMPACT OF THE CANADIAN FEDERAL MINIMUM WAGE ON EMPLOYMENT,
WAGE DISTRIBUTION, AND COSTS

In chapter III various past studies were reviewed and their findings
discussed. Particular attention was paid to the various effects which are
frequently felt to be associated with such laws, such as the tendency for
the less skilled, the older workers, teenagers, and females to be hurt more
than helped. Furthermore, it was pointed out that such laws tend to have
differing impacts on different regions and industries within a country.

## 4.1 THE STATE OF THE ECONOMY AT THE TIME
OF THE FEDERAL MINIMUM WAGE IMPLEMENTATION

Before proceeding to the results of our analysis on the impact of the
Federal Minimum Wage it is useful to present a sketch of the Canadian econ-
omy at the time of its enactment. Specifically, we will briefly review the
major features from early 1964 to the end of 1967. Such a review seems to
be appropriate since a minimum wage enacted during times of great prosperity
has different repercussions from one passed during times of stagnation or
economic recession. In the former case one may expect the economy to be far
better able to take an increase in wage costs in stride than in the latter
instance.

As was pointed out in the 1967 report of the Economic Council of Canada
(ECC) "as of June 1967, the Canadian economy had been expanding without a
significant reversal since the business cycle trough in March 1961. The
expansion had thus lasted 75 months. This represents probably the longest
uninterrupted expansion in Canadian business cycle history. It also consti-
tutes the largest expansion in terms of the absolute rise in the volume of
total output and total employment. Since 1961, Canada has in fact exper-
ienced what could appropriately be described as a Great Expansion." 1/
The report notes that the Great Expansion was a broadly based phenomenon
affecting most sectors of the economy. "Physical evidence of the tremendous
expansionary forces in Canada since 1961 may be observed on all sides: in
the very substantially enlarged numbers of those employed; in the major
expansion of consumer incomes and purchases; in the mounting volume and
widening range of Canadian exports; in the growth of the productive capacity
of business enterprises; and in the spectacular recent expansion of highways,
roads, transit systems, universities, schools and other social capital
facilities." 2/

Table 1 illustrates some of the changes which took place between 1961
and 1966 and also, for comparison in the period 1956-61:

## TABLE 1

Changes in Major Business Indicators and Changes in
Major Components of Final Demand, 1956-61 and 1961-66

(total percentage change in period)

|  | 1956-61 | 1961-66 |
|---|---|---|
| Gross National Product |  |  |
|   - Value | 23 | 54 |
|   - Volume | 11 | 35 |
| Employment | 8 | 18 |
| Unemployment rate | (3.4% to 7.1% ) | (7.1% to 3.6% ) |
| Consumer expenditure | 19 | 29 |
| Government expenditure on goods and services | 16 | 26 |
| New residential construction | -15 | 21 |
| New non-residential construction | - 7 | 46 |
| New machinery and equipment | -17 | 82 |
| Exports of goods and services | 17 | 52 |
| Imports of goods and services | 3 | 47 |
| Total final demand | 15 | 33 |

Note:  decrease shown -

Source:  Selected from Fourth Annual Review (ECC) 1967, various
tables.

This general upsurge in the economy had its repercussions on the labour
market which was characterized by a constant decline in unemployment until
1966.  Subsequently, unemployment rose once more as may be noted from
Table 2.

TABLE 2

Civilian Labour Force

(data represent changes from preceding year, in thousands)

|              | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 |
|--------------|------|------|------|------|------|------|------|
| Labour Force | 94   | 133  | 165  | 208  | 279  | 274  | 225  |
| Employment   | 170  | 150  | 234  | 253  | 290  | 227  | 158  |
| Unemployment | -76  | -16  | -50  | -44  | -13  | 46   | 67   |

Note:  decline shown -

Source:  Sixth Annual Review (ECC) 1969, p. 140.

Table 2 shows that from 1962 to 1966 the annual increases in the labour force were less than the annual increases in employment.  The differential between the two magnitudes consisted in a decline in unemployment  which amounted to about 200,000 over the same years.  The unemployment decline was particularly large in 1962, 1964, and 1965, levelling off by 1966 preparatory to a reversal of the trend in 1967.  It follows that from the employment point of view the Federal Minimum Wage of 1965 was enacted at  a propitious time indeed, coinciding with the lowest unemployment rate since the mid-1950s.

An analysis of regional unemployment data similarly shows that unemployment reached its low point either in 1965 or 1966 for the period  under consideration.  See Table 3.

## TABLE 3

### Unemployment by Region (in thousands)

(unadjusted for seasonal variation)

| Year | Atlantic | Quebec | Ontario | Prairie | B.C. |
|------|----------|--------|---------|---------|------|
| 1962 | 62 | 139 | 105 | 46 | 39 |
| 1963 | 55 | 142 | 94 | 44 | 39 |
| 1964 | 46 | 124 | 83 | 37 | 34 |
| 1965 | 45 | 109 | 67 | 31 | 28 |
| 1966 | 40 | 100 | 69 | 26 | 32 |
| 1967 | 42 | 116 | 89 | 29 | 39 |
| 1968 | 47 | 145 | 104 | 39 | 47 |

Source:  Various issues of the Canadian Statistical Review.

In conclusion, unemployment declined steadily from its post World War II highpoint of more than 7% in 1961 to about half that much in 1965/66.

Another important variable besides employment changes is the adjustment of the price level.  If prices were stable over the years the effect of a Federal Minimum Wage could be analyzed with more confidence.  While the early 1960s showed only small year-to-year changes in prices the situation changed markedly starting in about 1965 when it had risen 2.5% over 1964.  After 1965 the rate of change of the price level continued to rise, reaching the annual rate of 4.1% in 1968.  See Table 4.

## TABLE 4

### Movement of Prices

(Percentage increases year to year)

| Year | Wholesale Price Index | Consumer Price Index |
|------|------|------|
| 1962 | 1.9 | 1.2 |
| 1963 | .3 | 1.8 |
| 1964 | 2.0 | 1.7 |
| 1965 | 3.6 | 2.5 |
| 1966 | 1.8 | 3.7 |
| 1967 | 2.2 | 3.6 |
| 1968 | 4.7 | 4.1 |

Source: For Consumer Price Index: From ECC, 1969, p. 146.
For Wholesale Price Index: Computed from data in Canadian Statistical Review, various years.

The behavior of the Wholesale Price Index (WPI) was more erratic and is less important for the purposes of this study. The Consumer Price Index's (CPI) importance derives from its being the measuring stick against which changes in earnings are compared. Although the familiar argument of differing good-baskets for various consumers holds true the CPI represents nevertheless the most reliable measuring stick available.

It will be readily realized that under conditions of such large year-to-year price changes the impact of a Federal Minimum Wage provision diminishes. It may be watered down to insignificance if a sufficiently long

time period is allowed to pass. In the case of the 1965 Federal Minimum
Wage law, prices rose by some 10% in the 30 or so following months. (The
1965 Federal Minimum Wage law contained no provision whereby it would move
up in the same proportion as the price level; instead it was fixed at $1.25.)

In conclusion, the Federal Minimum Wage was passed at a time when the
decline in unemployment in the 1960s had reached its low point. Similarly,
starting in 1965 the rate of price rise sharply accelerated. Therefore, with
respect to the labour market situation the Federal Minimum Wage came at a
time when its chance for passage was good and its potential effect in terms
of costs to low-wage employers relatively minor. The latter was the case
because of the rapidly declining proportion of Federal Jurisdiction Industry
(FJI) workers earning less than $1.25 an hour. Furthermore, rising prices
softened the impact of the Federal Minimum Wage on low-wage employers
noticeably.

## 4.2 THE COVERAGE OF THE FEDERAL MINIMUM WAGE

The coverage was restricted to industries under Federal Jurisdiction.
In mid-1965 such employment was put at about 380,000 as determined by the
Working Conditions Survey conducted in May 1965 by the Canada Department of
Labour. Thus total FJI employment amounted to some 5% of total non-
agricultural employment, or about 1 worker in 20.

The federal jurisdiction industries (FJI) are: rail, air, road and
water transportation; services incidental to water transportation; pipeline
operations; telephone and cable communications; radio and television; grain
elevators and grain milling; banking; hotels; uranium mining; and the
federal Crown corporations. There are a total of 17 FJI. On the average

they tend to be characterized by relatively high wages and by a large
service sector component. The degree of unionization among such industries
varies markedly.

### 4.3 DATA COLLECTION, NATURE OF COLLECTED DATA AND THEIR IMPLICATIONS.

The basic data was collected by the Canada Department of Labour from
questionnaires sent to all firms under Federal Jurisdiction. In May 1965
the Department carried out two surveys as follows:

1) Working Conditions Survey: Its purpose was to determine the total
   number of workers in FJI. The number was put at about 381,500.

2) Wage Survey: This survey restricted itself to a determination of
   the number of workers in FJI whose earnings per hour (or hour-
   equivalent) were $2.50 or less (up to $2.50 an hour). Under this
   survey forms were mailed to 4,573 firms. Since response was vol-
   untary only some 54% of the 4,573 forms, or 2,455, were returned.
   Based on those 2,455 responses it was found that the number of
   workers earning up to $2.50 an hour was 272,800.

Twelve months later, in May 1966, the Department repeated the two
surveys and found that total FJI employment (as determined by the Working
Conditions Survey) had risen from about 381,500 in May 1965 to about 391,000
in May 1966.

Identical forms as used in the Wage Survey were mailed again in May
1966 to the same firms as in 1965. Of the questionnaires returned (covering
only workers earning up to $2.50 an hour) many had to be discarded for the
following reason. Since we wanted to determine the response of firms to the

implementation of the Federal Minimum Wage we decided to study the same firms in both 1965 and 1966. Hence, of the questionnaires returned in 1965 and 1966 only those were used where the same firms had returned a form in both 1965 and 1966. Consequently firms who had returned the questionnaire in only one of the two years were left out of the study.

As a result of the above procedure there were only 1511 firms (out of about 4500) where the above requirement was satisfied. It will be apparent that the large number of rejections of questionnaires and the sizeable non-response introduced features which may well distort some of the findings.

Since the sample was restricted to individuals earning up to $2.50 an hour (earnings of salaried employees were determined by dividing earnings by the number of hours of work; the wage rate also includes earnings in addition to regular straight-time wages such as cost of living allowances, shift premiums, bonuses, etc.) the upper portion of the frequency distribution of earnings was missing. This condition arose because the wage survey restricted itself to individuals earning up to $2.50. Hence, a number of constraints were imposed on the analysis since some of the more powerful tools of **statistical inference** could not be used.

### 4.4 FINDINGS

### 4.41 General Findings

Section 4.41 studies the shift in employment from the wage class of $2.50 an hour and less to the wage class of $2.51 and more between 1965 and 1966. The data are broken down into suitable categories of workers so as to visualize the differing shifts among the various categories of workers, such as males vs. females, office vs. non-office, and so forth.

(a) <u>Canada</u>

As determined by the Working Conditions Survey taken by the Canada
Department of Labour in May of 1965 and in May of 1966 (the former some 2
months before the enactment of Federal Minimum Wage law, and the latter
some ten months afterwards) total employment in FJI rose from about 381,000
in 1965 to about 391,000 in 1966, or a rise of 2.6%. This suggests that at
first sight the Federal Minimum Wage had no noticeable impact on employment.
Such a conclusion may be somewhat misleading since it is not possible to
distinguish between the mere changes in employment over time and the change
in the rates of change in employment. The latter magnitude may have been
affected but available techniques seem to rule out its determination.

Furthermore, the small size of FJI employment suggests that the FJI
labor market may have been affected by conditions in the labor market out-
side federal jurisdiction. Non-FJI employment, as noted before, constituted
about 95% of total Canadian employment.

Table 5 shows the percentage of workers in FJI earning up to $2.50 an
hour as a percentage of total FJI employment; in other words, line b)
divided by line a) in Table 6 for both 1965 and 1966.

Table 5 illustrates that, on the whole, the percentage of workers
earning less than $2.50 an hour declined between 1965 and 1966, both for
male and female, non-office and office workers. The percentage-point gains
between 1965 and 1966 ranged from a low of about 3.5 points for non-office
males to a high of 8 percentage-points for male office workers. The only
exception to this general shift of workers from the earning class of $2.50
an hour and less to the earning class of more than $2.50 was registered for
non-office females, where the percentage <u>rose</u> by almost two percentage
points.

TABLE 5

| | Non-office | | | Office | | | Total | | |
| | male | female | total | male | female | total | male | female | total |
|---|---|---|---|---|---|---|---|---|---|
| | | in % | | | in % | | | in % | |
| 1965: Percentage of individuals in FJI, earning up to $2.50/hr. as % of total FJI employment. | 68.3 | 83.5 | 69.5 | 50.1 | n.a.* | 74.3 | 62.7 | n.a.* | 71.5 |
| 1966: Percentage of individuals in FJI, earning up to $2.50/hr. as % of total FJI employment. | 64.8 | 85.1 | 66.5 | 45.1 | 91.5 | 66.3 | 58.3 | 90.5 | 66.4 |

*underlying data were rejected because of inconsistencies.

## TABLE 6

Estimated Employment in FJI (Federal Jurisdiction Industries) in May 1965 and May 1966

| Year | Type of Survey | Non-office | | | Office | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| 1965 | Working Conditions Survey of Total (a) | 204,845 | 17,605 | 222,450 | 92,241 | 67,226 | 159,216 | 297,105 | 84,576 | 381,668 |
| | Working Conditions Survey of 1,511 (b) | 138,934 | 14,305 | 153,239 | 79,043 | 66,737 | 145,780 | 217,977 | 81,042 | 299,019 |
| | Wage Survey | 140,045 | 14,569 | 154,614 | 46,170 | 72,018 | 118,188 | 186,215 | 86,587 | 272,802 |
| | Sample Size | 109,071 | 12,274 | 121,345 | 40,431 | 67,499 | 107,930 | 149,502 | 79,866 | 229,368 |
| 1966 | Working Conditions Survey of Total (a) | 196,682 | 17,395 | 214,007 | 96,855 | 80,381 | 177,236 | 293,537 | 97,776 | 391,313 |
| | Working Conditions Survey of 1,511 (b) | 134,689 | 14,536 | 149,225 | 83,744 | 75,843 | 159,587 | 218,433 | 90,379 | 308,812 |
| | Wage Survey | 127,524 | 14,844 | 142,368 | 43,707 | 73,645 | 117,352 | 171,231 | 88,489 | 259,720 |
| | Sample Size | 99,634 | 13,097 | 112,731 | 38,549 | 69,939 | 108,488 | 138,183 | 82,927 | 221,110 |

Note: Working Conditions Survey of Total is a yearly survey done on all FJI in order to determine
total employment in FJI.
Working Conditions Survey of 1,511 refers to the total employment of the 1,511 firms which
constitute our matched sample (by matched sample is meant firms returning questionnaires
on Wage Survey in both 1965 and 1966).
Wage Survey is a survey on FJI workers earning up to $2.50/hr. Response to survey was optional.
Hence, only about half the questionnaires sent out were returned.
Sample Size refers to those firms which returned the questionnaires sent to them under the Wage
Survey in both 1965 and 1966. The number of firms meeting this requirement was 1,511.

## TABLE 7

Change in Employment in FJI (Federal Jurisdiction Industries)
on the basis of the Matched Sample, between May 1965 and
May 1966

| Industry | Sample Size 1965 | Sample Size 1966 | Change in Employment of workers earning up to $2.50/hr. |
|---|---|---|---|
| Rail Transportation | 83,491 | 75,987 | -7,504 |
| Air " | 5,393 | 6,753 | 1,360 |
| Road " | 14,125 | 13,090 | -1,035 |
| Water " | 6,555 | 6,874 | 319 |
| Services incidental to water transportation | 4,665 | 3,595 | -1,070 |
| Pipeline operations | 181 | 201 | 20 |
| Telephones | 22,781 | 24,773 | 1,992 |
| Cables | 240 | 242 | 2 |
| Radio & TV Broadcasting | 6,425 | 5,893 | - 532 |
| Grain elevators & grain mills | 12,384 | 12,858 | 474 |
| Banks | 63,987 | 63,732 | - 255 |
| Hotels | 1,229 | 1,214 | - 15 |
| Uranium Mining | 753 | 191 | - 562 |
| Federal Crown Corp: Mfg. | 1,193 | 1,233 | 40 |
| " " " : Other | 4,078 | 3,822 | - 256 |
| Miscellaneous | 1,795 | 652 | -1,143 |
| Total | 229,368 | 221,110 | -8,165 |

Note:  Decrease in number of workers earning up to $2.50/hr. shown —.
Where no sign the converse holds true.

Table covers the number of workers earning up to $2.50/hr. in the
1,511 firms constituting our matched sample.

## TABLE 8

Change in Employment in FJI on the basis of the Matched Sample, by Sex, Between
May 1965 and May 1966

| Industry | Sample Size 1965 | | Sample Size 1966 | | Change in Employment of workers earning up to $2.50/hr. | | |
|---|---|---|---|---|---|---|---|
| | Male | Female | Male | Female | Male | Female | Total |
| Rail Transportation | 78,154 | 5,337 | 70,760 | 5,227 | -7,394 | -110 | -7,504 |
| Air " | 3,517 | 1,876 | 3,858 | 2,895 | 341 | 1,019 | 1,360 |
| Road " | 12,971 | 1,154 | 11,901 | 1,189 | -1,071 | 35 | -1,035 |
| Water " | 6,000 | 555 | 6,328 | 546 | 327 | - 8 | 319 |
| Services inc. to Water Transport. | 4,351 | 514 | 3,286 | 509 | -1,065 | - 5 | -1,070 |
| Pipeline operations | 67 | 114 | 63 | 138 | - 4 | 24 | 20 |
| Telephone communications | 4,936 | 17,845 | 5,987 | 18,786 | 1,051 | 941 | 1,992 |
| Cable " | 169 | 71 | 175 | 67 | 6 | - 4 | 2 |
| Mail TV | 3,816 | 2,609 | 3,489 | 2,404 | - 327 | -205 | - 532 |
| Grain elevators & grain milling | 10,230 | 2,154 | 10,670 | 2,188 | 440 | 34 | 474 |
| Banking | 19,059 | 44,928 | 17,207 | 46,525 | -1,852 | 1,597 | - 255 |
| Hotels | 768 | 461 | 786 | 428 | 18 | - 33 | - 15 |
| Uranium Mining | 718 | 35 | 153 | 38 | - 565 | 3 | - 562 |
| Federal Crown Corp.: Mgf. | 769 | 424 | 800 | 433 | 31 | 9 | 40 |
| " " " : Others | 2,291 | 1,787 | 2,167 | 1,655 | - 124 | -132 | - 256 |
| Miscellaneous | 1,686 | 109 | 553 | 99 | -1,133 | - 10 | -1,143 |
| - Total | 149,502 | 79,866 | 138,183 | 82,927 | | | |

Note: Declines in number of workers earning up to $2.50/hr. shown —.
Where no sign the converse holds true.

## TABLE 9

Changes in Employment in FJI on Basis of Matched Sample, by Location of Work, between May 1965 and May 1966

| Industry | Sample Size 1965 | | Sample Size 1966 | | Change in Employment of workers earning up to $2.50/hr. | | |
|---|---|---|---|---|---|---|---|
| | Office | Non-Office | Office | Non-Office | Office | Non-Office | Total |
| Rail Transportation | 20,828 | 62,663 | 19,157 | 56,830 | -1,671 | -5,833 | -7,504 |
| Air " | 2,450 | 2,943 | 2,592 | 4,161 | 142 | 1,218 | 1,360 |
| Road " | 2,725 | 11,400 | 3,726 | 9,364 | 1,001 | -2,036 | -1,035 |
| Water " | 713 | 5,842 | 865 | 6,009 | 152 | 167 | 319 |
| Services incidental to Water Transport. | 720 | 3,945 | 893 | 2,702 | - 173 | -1,243 | -1,070 |
| Pipeline operations | 141 | 40 | 191 | 10 | 50 | - 30 | 20 |
| Telephone Communications | 9,674 | 13,107 | 10,495 | 14,278 | 821 | 1,171 | 1,992 |
| Cable | 87 | 153 | 84 | 158 | - 3 | 5 | 2 |
| Radio & TV Broadcasting | 3,217 | 3,208 | 2,886 | 3,007 | - 331 | - 201 | - 532 |
| Grain elevators & grain milling | 3,675 | 8,709 | 3,969 | 8,889 | 294 | 180 | 474 |
| Banks | 60,500 | 3,487 | 60,876 | 2,856 | 376 | - 631 | - 255 |
| Hotels | --- | 1,229 | --- | 1,214 | -- | - 15 | - 15 |
| Uranium Mining | 43 | 710 | 39 | 152 | - 4 | - 558 | - 562 |
| Federal Crown Corp: Mfg. | 369 | 824 | 327 | 906 | - 42 | 82 | 40 |
| " " " : Others | 2,709 | 1,369 | 2,304 | 1,518 | - 405 | 149 | - 256 |
| Miscellaneous | 79 | 1,716 | 84 | 568 | 5 | 1,148 | -1,143 |
| - Total | 107,930 | 121,345 | 108,488 | 112,622 | | | |

Note: Declines in number of workers earning up to $2.50/hr. shown —.
Where no sign the converse holds true.

## TABLE 10

Concentration of Employment, by Industry, on the basis
of the Matched Sample, May 1965 and May 1966

| Industry | $1.25 $\underset{*}{-}$ $1.49 | | $1.25 $\underset{**}{-}$ $1.29 | |
|---|---|---|---|---|
| | 1965 | 1966 | 1965 | 1966 |
| | in % | | in % | |
| | Col. 1 | Col. 2 | Col. 1 | Col. 2 |
| Rail Transportation | 3.0 | 3.5 | 23.46 | 26.88 |
| Air " | 6.2 | 4.95 | 16.47 | 23.38 |
| Road " | 10.82 | 9.46 | 22.23 | 28.76 |
| Water " | 18.66 | 9.70 | 10.87 | 17.37 |
| Services incid. to Water Transportation | 3.84 | 5.79 | 39.10 | 42.56 |
| Pipeline operation | 4.97 | 0 | 0 | 0 |
| Telephone communications | 22.50 | 18.10 | 14.10 | 15.76 |
| Cable Communications | 5.42 | 3.31 | 7.69 | 0 |
| Radio & TV Broadcasting | 10.10 | 12.40 | 22.73 | 26.40 |
| Grain elevators & Grain milling | 15.73 | 16.09 | 24.38 | 22.18 |
| Banking | 30.00 | 39.86 | 20.08 | 23.65 |
| Hotels | 19.45 | 69.28 | 26.78 | 69.80 |
| Uranium Mining | .13 | 0 | 0 | 0 |
| Federal Crown Corp.:  Mfg. | 6.12 | 3.65 | 6.85 | 6.67 |
| "    "    " : Others | 9.74 | 8.82 | 11.59 | 7.72 |
| Miscellaneous | .95 | .15 | 0 | 1.00 |

Note:  * The number of employees paid between $1.25 and $1.49 in the
industry as a percentage of total employees in the industry
earning $2.50/hr. and less.

** The number of employees paid between $1.25 and $1.29 in the
industry as a percentage of employees paid between $1.25 and
$1.49 in the industry.

## TABLE 11

Change in Employment, by Province, in FJI, on basis of
the Matched Sample, between May 1965 and May 1966

| Province | Sample Size 1965 | Sample Size 1966 | Change in Employment of workers earning up to $2.50/hr. |
|---|---|---|---|
| Newfoundland | 6,099 | 5,862 | - 237 |
| Prince Edward Island | 763 | 786 | 23 |
| Nova Scotia | 7,551 | 7,548 | -  3 |
| New Brunswick | 7,406 | 7,383 | - 23 |
| Quebec | 68,625 | 64,263 | -4,362 |
| Ontario | 87,117 | 85,613 | -1,504 |
| Manitoba | 17,033 | 15,143 | -1,890 |
| Saskatchewan | 8,496 | 8,281 | - 215 |
| Alberta | 11,717 | 12,110 | 393 |
| British Columbia | 14,433 | 13,605 | - 828 |
| Other | 30 | 516 | |
| - Total | 229,275 | 221,110 | |

Note: Decline in number of workers earning up to $2.50/hr. shown - .
Where no sign, the converse holds true.

## TABLE 12

Change in Employment by Province, in FJI, on Basis of Matched Sample, between May 1965 and May 1966

| Province | Sample Size 1965 | | Sample Size 1966 | | Change in Employment of workers earning up to $2.50/hr. | | |
|---|---|---|---|---|---|---|---|
| | Office | Non-Office | Office | Non-Office | Office | Non-Office | Total |
| Newfoundland | 1,500 | 4,599 | 1,550 | 4,312 | 40 | - 287 | - 247 |
| Prince Edward Island | 344 | 419 | 349 | 437 | 5 | 18 | 23 |
| Nova Scotia | 3,054 | 4,497 | 3,017 | 4,531 | - 37 | 37 | 0 |
| New Brunswick | 2,594 | 4,812 | 2,654 | 4,729 | 60 | - 83 | - 23 |
| Quebec | 32,359 | 36,266 | 32,382 | 31,881 | 23 | - 4,390 | - 4,367 |
| Ontario | 42,836 | 44,281 | 42,878 | 42,735 | 42 | - 1,546 | - 1,504 |
| Manitoba | 6,159 | 10,874 | 5,886 | 9,257 | - 273 | - 1,587 | - 1,860 |
| Saskatchewan | 3,638 | 4,858 | 3,617 | 4,664 | - 21 | - 197 | - 218 |
| Alberta | 6,726 | 4,991 | 6,625 | 5,485 | - 101 | 494 | 393 |
| British Columbia | 8,703 | 5,735 | 8,786 | 4,819 | 83 | - 816 | - 733 |
| Other | 17 | 13 | 744 | - 227 | | | |
| - Total | 107,930 | 121,345 | 108,488 | 112,731 | | | |

Note: Decline in number of workers earning up to $2.50/hr. shown -. Where no sign, the converse holds true.

## TABLE 13

Change in Employment, by Province, in FJI, on basis of Matched Sample, between May 1965 and May 1966

| Province | Sample Size 1965 | | Sample Size 1966 | | Change in Employment of workers earning up to $2.50/hr. | | |
|---|---|---|---|---|---|---|---|
| | Male | Female | Male | Female | Male | Female | Total |
| Newfoundland | 5,310 | 789 | 5,041 | 821 | -269 | 32 | - 237 |
| Prince Edward Island | 568 | 195 | 584 | 202 | 16 | 7 | 23 |
| Nova Scotia | 5,683 | 1,868 | 5,642 | 1,906 | - 41 | 38 | - 3 |
| New Brunswick | 6,127 | 1,279 | 6,022 | 1,361 | -105 | 82 | 23 |
| Quebec | 44,781 | 23,844 | 39,837 | 24,426 | -4,944 | 582 | -4,362 |
| Ontario | 51,991 | 35,126 | 49,249 | 36,364 | -2,742 | 1,238 | -1,504 |
| Manitoba | 13,369 | 3,664 | 11,331 | 3,812 | -2,038 | 148 | -1,890 |
| Saskatchewan | 6,323 | 2,173 | 6,105 | 2,176 | - 218 | 3 | - 215 |
| Alberta | 7,221 | 4,496 | 7,236 | 4,874 | 15 | 378 | 393 |
| British Columbia | 8,006 | 6,432 | 6,730 | 6,875 | -1,276 | 443 | - 833 |
| Other | 123 | - 93 | 406 | 110 | | | |
| - Total | 149,389 | 78,866 | 137,777 | 82,817 | | | |

Note: Decline in number of workers earning up to $2.50/hr. shown - . Where no sign, the converse holds true.

Table 6 shows the results of the various surveys taken by the Canada Department of Labour for 1965 and 1966 for various types of workers.

(b) By Industry

Tables 7 to 10 show the changes in employment of workers earning up to $2.50 an hour.  (As mentioned before the data made available to us were such as to include only workers earning $2.50 an hour or less.  Hence, the wage distribution of $2.51 an hour and more was not available).

In a number of industries, particularly railroad, road transport, services incidental to water transportation, as well as 'miscellaneous' industries, there was a substantial shift of employment out of the earning range of up to $2.50 an hour into the range of $2.51 and over.  Thus the declines in employment should not be interpreted as people losing their jobs but merely as a shift from the $2.50 an hour and less earning group to the more than $2.50 an hour earning class.

It will be observed that the preponderance of employment changes for this $2.50 an hour and less earning group shows that sizeable numbers of workers have benefited  from wage increases.  Industries where the number of workers earning $2.50 an hour and less increased, such as air and water transportation and telephones have a high proportion of female workers whose characteristics in terms of labor  force attachment are familiar.

Table 8 shows that on the whole a higher proportion of male workers moved into the more than $2.50 an hour earning class than female workers. This is illustrated in the railroad industry where about 98% of workers moving into the more than $2.50 an hour category were men although men constituted a much lower proportion of the total work force in that

industry. Another illustration is banking where women account for about
3/5 of the work force. In this case 1823 men moved into the more than
$2.50 an hour earning class while women workers earning $2.50 or less actu-
ally increased by 1568.

As to office vs. non-office work, Table 9 shows that in the aggregate
a larger percentage of non-office workers moved out of the $2.50 an hour
and less earning class. This may be due to the composition of the office
work force which is composed of a large proportion of women workers who by
virtue of lack of seniority comparable to that of men and discontinuity of
service due to household responsibilities, etc., have on the whole fewer
opportunities to work themselves into the more than $2.50 an hour range.

Table 10 shows the percentage of workers earning up to $2.50 an hour
who fell in the $1.25-$1.49 and/or $1.25-$1.29 ranges. Since it is to be
expected that a Federal Minimum Wage will push those workers below the
Federal Minimum Wage level up to (or slightly higher than) the Federal
Minimum Wage mandated, the percentage of workers in the range just imme-
diately above the Federal Minimum Wage level should be rising. As may be
seen in column 2 this is indeed the case. While the response to such a
Federal Minimum Wage differs from industry to industry affecting the low-
wage industries more than the high-wage industries, the percentage in the
$1.25-$1.29 class should rise more in low-wage industries than in high-wage
industries. This is what happened as seen from the changes in the hotel
industry in particular where before the Federal Minimum Wage enactment about
26% of workers earning less than $2.50 an hour earned between $1.25 and
$1.29. This percentage rose to almost 70%, suggesting a high degree of
concentration in the low-wage range just immediately above the Federal

TABLE 14

Concentration of Employment, by Province, on the basis of the
Matched Sample, May 1965 and May 1966

| Province | * | | ** | |
|---|---|---|---|---|
| | $1.25 - $1.49 | | $1.25 - $1.29 | |
| | 1965 | 1966 | 1965 | 1966 |
| | in% | | in% | |
| | Col. 1 | Col. 2 | Col. 1 | Col. 2 |
| Newfoundland | 8.20 | 14.41 | 10.77 | 38.93 |
| Prince Edward Island | 11.00 | 23.66 | 30.95 | 35.48 |
| Nova Scotia | 13.56 | 25.87 | 26.07 | 38.53 |
| New Brunswick | 7.19 | 11.43 | 24.57 | 45.85 |
| Quebec | 14.40 | 15.55 | 17.52 | 18.79 |
| Ontario | 16.00 | 16.63 | 19.63 | 22.55 |
| Manitoba | 9.97 | 20.30 | 19.83 | 22.50 |
| Saskatchewan | 13.83 | 20.17 | 20.51 | 40.87 |
| Alberta | 17.31 | 23.98 | 22.27 | 25.26 |
| British Columbia | 19.21 | 26.82 | 20.39 | 16.82 |

Note:  * refers to the number of employees paid between $1.25 and $1.49 in
the province as a percentage of total employees in FJI-employment
in that province earning up to $2.50/hr.
** refers to the number of employees paid between $1.25 and $1.29 in
FJI-employment in province as a percentage of employees paid
between $1.25 and $1.49 in province.

Minimum Wage. In other words in the hotel industry only about 30% of those earning up to $2.50 an hour actually were paid between $1.30 and $2.50. The changes in column 2 between 1965 and 1966 for the remaining industries are far less drastic than in Hotels. In Air, Water, and Road Transportation and Banking the percentages rose by only a few points.

### (c) By Province

Table 11 shows that the number of workers in the wage class earning up to $2.50 an hour has declined in all provinces except Alberta and Prince Edward Island. For some provinces, such as Quebec and Manitoba, the shift has been between about 6% and 10% from the 1965 level. Table 12 illustrates the larger than proportionate decline of workers earning $2.50 an hour and less in non-office employment than in offices. This fact, which was observed already on an industry basis, may reflect the widespread employment of women workers in offices and the well known corollary that such workers on the whole earn less per hour than males for the familiar reasons. This point is reinforced by Table 13 where it will be noticed that in provinces like Quebec, Ontario, Manitoba, and British Columbia, many male workers were able to shift to the wage class with hourly earnings of over $2.50 an hour. At the same time, for these same provinces the number of women earning up to $2.50 an hour rose. Table 14, column 2, shows that in provinces which are generally believed to be low-wage the percentage of workers in the $1.25-$1.29 earning range increased substantially reflecting the fact that numerous workers earning less than the minimum wage were pushed up to $1.25 or slightly higher. This observation is particularly noticeable in the case of New Brunswick, Newfoundland, Nova Scotia and Prince Edward Island. The large increase for Saskatchewan is quite surprising since it seems to run counter to expectations. However, on the average, the

observation that low-wage provinces had many workers below the $1.25 minimum

before the Federal Minimum Wage enactment and that they were subsequently

pushed into the earning bracket immediately above the Federal Minimum Wage,

holds true.  Provinces with generally higher wage levels, such as Ontario,

Manitoba, Alberta and British Columbia, showed only minor changes in the

percentage of workers in the $1.25-$1.29 earning bracket.

## 4.42  Testing of Hypothesis

Section 4.41 analyzed the various shifts in employment of workers

earning up to $2.50 an hour.  It was observed that different groups of

workers, such as males and females, office and non-office workers, exper-

ienced different shifts in the employment pattern.  Males and non-office

workers were on the whole able to shift in larger numbers into the higher

earning bracket than females and office workers.

In the present section the hypothesis outlined in this chapter will

be tested.  Except where specifically mentioned otherwise, the group  of

employees under study is that of the 1,511 firms which constitute our matched

sample (as described previously in this chapter).

(a) Hypothesis I:  The impact of the minimum wage should be felt in low-
                   wage areas and industries.

The employment data used in this subsection represent total employment

of the 1,511 firms who returned the questionnaires mailed to them by the

Canada Department of Labour in May 1965 and in May 1966.  As mentioned

before, of the 4,600 or so forms mailed out on those two dates slightly

less than half of them were returned (2,455).  Of these 2,455 forms some

900 had to be rejected because of the fact that firms returning filled out

forms in one year did not do so the following year or vice-versa. Our purpose was to have the _same_ set of firms for both years. Hence, only 1,511 firms could be studied as a result of the adoption of this criterion. It should be observed before proceeding that the sample of 1,511 is not a probability sample due to the familiar problems inherent in non-response and self-selection.

By Industry: As shown in Table 15, total employment by industry for these 1,511 firms rose in 11 out of 15 cases (the railroad industry could not be studied on account of deficiencies in the basic data made available to us). It declined in only 4 cases, specifically for Services incidental to Water Transportation, Hotels, Federal Crown Corporation (Other) and Miscellaneous industries. Column 4 in Table 15 shows the percentage changes in employment between May 1965 and May 1966. In so e industries there were sizeable increases particularly in Air and Water transportation, Telephone communications, Grain elevators and Grain milling, and Pipeline operations. In two of the four industries experiencing declines in employment the percentage decline was large: in Services incidental to Water Transportation and in Federal Crown Corp. (Other).

In order that we could determine whether the wage distribution for some industries had changed more than for others we adopted the following formula:

$$\left[ \frac{50\%ile - 10\%ile \text{ in } 1966}{\text{median in } 1966} \right] - \left[ \frac{50\%ile - 10\%ile \text{ in } 1965}{\text{median in } 1965} \right]$$

which we henceforth call the 'coefficient of relative narrowing'. The nature of the formula is such as to show a negative coefficient if the wage distribution has narrowed and a positive coefficient if it has widened.

TABLE 15

Total Employment in FJI, by Industry, May 1965 and
May 1966, for the 1,511 firms in the matched sample

| Industry | Total Employment in May 1965 | Total Employment in May 1966 | Change in Employment between 1965-1966 | Col. 3 as % of Col. 1 |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Rail transportation | n.a.* | n.a.* | - | - |
| Air " | 14,782 | 17,552 | 2,770 | 18.74 |
| Road " | 17,605 | 17,872 | 267 | 1.52 |
| Water " | 8,816 | 9,746 | 930 | 10.55 |
| Services incidental to Water Transport. | 11,497 | 9,010 | -2,487 | -21.63 |
| Pipeline operations | 722 | 986 | 264 | 36.57 |
| Telephone communications | 36,857 | 41,241 | 4,384 | 11.89 |
| Cable communications | 551 | 569 | 18 | 3.27 |
| Radio and TV | 13,096 | 13,968 | 872 | 6.66 |
| Grain elevators & Grain milling | 15,872 | 17,162 | 1,290 | 8.13 |
| Banking | 77,088 | 78,772 | 1,685 | 2.18 |
| Hotels | 1,274 | 1,214 | - 60 | - 4.17 |
| Uranium Mining | 1,364 | 1,469 | 105 | 7.70 |
| Federal Crown Corp.: Mfg. | 3,932 | 4,049 | 117 | 2.98 |
| " " " Other | 10,016 | 8,653 | -1,363 | -13.61 |
| Miscellaneous | 2,923 | 2,870 | - 53 | - 1.81 |

Note: The above employment data refer to total employment of the 1,511
firms constituting our matched sample. The 1,511 firms are those
who filled out and returned the questionnaires mailed to them by
the Canada Department of Labour in both 1965 and 1966. The above
employment data show total employment of the 1,511 firms.
* Railroads had to be left out on account of shortcomings in the
data made available to us.
Decrease shown —.

Before proceeding it should be noted that the above formula—which has been used in similar form in various Federal Minimum Wage studies such as that by Kaun 3/ for example—requires that at least the lower half of the wage distribution be known in order to be usable.  While it would be possible to use some lower upper decile, such as the 40th%ile or the 30th%ile, it is doubtful if such coefficients based upon such a small portion of the total wage distribution would be of much use.  We decided on the 50th%ile for our purposes.  At this point we were faced by the problem that the data at our disposal showed the wage distribution up to $2.50 an hour only, i.e. the distribution above $2.50 was not known although we knew total employment.  Hence, for industries which are characterized by high earnings a much smaller proportion of that industry's work force earned up to $2.50. This is illustrated by Table 16 where for Pipeline operations, and Miscellaneous industries, for example, only about 20% earned up to $2.50.  As a result we had to reject 9 industries where the upper decile was less than the 5th.  This left only the following 6 industries: Road and Water Transportation, Telephone Communications, Grain Elevators and Grain Milling, Banking, and Hotels.

It will be observed that the coefficient of relative narrowing was negative in each of the six cases thus supporting the hypothesis that the wage distribution had narrowed.  Similarly, the magnitude of the coefficient is much larger for Hotels—an industry known to have relatively low earnings as manifested by the fact that the available range included 90% of the work force—than for the other five industries.

Column 4 in Table 16 shows the cost to employers in each industry as a result of raising the hourly wage of those workers who before the minimum

## TABLE 16

Measures of changes in the wage distribution; direct costs
due to minimum wage implementation; by Industry, between May 1965 and
May 1966

| Industry | Available a/ range in percentiles | Changes in b/ absolute wage dis- tribution, in cents | Coefficient c/ of relative narrowing | Direct d/ incremental labour costs due to MW, in $ |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Rail Transportation | n.a. | n.a. | n.a. | 832,000 |
| Air " | 10 - 30 | 2 | n.a. | 104,000 |
| Road " | 10 - 70 | 9 | -.021 | 214,000 |
| Water " | 10 - 70 | -3 | -.016 | 208,000 |
| Services incidental to Water Transport. | 10 - 30 | -10 | n.a. | 37,000 |
| Pipeline operations | 10 - 20 | -12 | n.a. | 00 |
| Telephone communication | 10 - 60 | - 6 | -.058 | 752,000 |
| Cable communications | 10 - 40 | 0 | n.a. | 3,000 |
| Radio & TV | 10 - 40 | - 1 | n.a. | 150,000 |
| Grain elevators & Grain milling | 10 - 75 | - 4 | -.019 | 473,000 |
| Banking | 10 - 80 | 3 | -.031 | 4,000,000 |
| Hotels | 10 - 90 | -27 | -.140 | 287,000 |
| Uranium Mining | 10 | - | n.a. | 00 |
| Federal Crown Corp.: Mfg. | 10 - 30 | - 7 | n.a. | 00 |
| " " " : Other | 10 - 40 | -14 | n.a. | 14,000 |
| Miscellaneous | 10 - 20 | - 5 | n.a. | 1,000 |

Notes: a/ The upper limit of the 'available range' is the highest possible decile for each industry for earnings of up to $2.50/hr. I.e. if the 4th decile earned, say $2.28, the 5th decile $2.47, and the 6th decile $2.62, then this industry would have an available range of 0-50. Since we exclude the lowest 9% the industry would have an available range of 10-50.

b/ The figures show whether the wage distribution over the available range, shown in column 1, has narrowed (-) or widened (no sign).

c/ The formula of the coefficient of relative narrowing is shown in the foregoing text. Below is an example of how it works out:
Assume the following numbers:
1966: 50%ile = $2.40      1965: 50%ile - $2.30
10%ile = $1.30              10%ile = $1.20
Median = $2.40             Median = $2.30
Thus coefficient is  .46 - .48 = - .02

d/ Shows the cost to employers in $ as a result of raising the hourly wage of workers earning less than $1.25/hr. before the minimum wage to the new mandated level of $1.25/hr.

wage enactment earned less than $1.25 an hour to the $1.25 an hour level.
In other words, if an employer had 10 workers earning $1.15 per hour for an
8-hour day before the Federal Minimum Wage enactment, then his incremental
labour cost per day would be $8.00.

We are aware that Federal Minimum Wage laws entail both direct and
indirect additional labour costs. While we were able to compute the former
the latter is practically impossible to establish with any degree of confi-
dence since too many other variables are involved.

By Province: Table 17 illustrates that employment of the 1,511 firms
constituting our matched sample rose in all provinces. However, the increase
ranged from a low of .11% in Manitoba to a high of 8.94% in British Columbia.
The pattern of employment increases in Table 17 suggests that there tends
to be a direct relationship between the general level of wages in a region
and the increase in employment. The growth rates for provinces generally
believed to be low-wage, such as Newfoundland, Prince Edward Island, Nova
Scotia, New Brunswick, and Quebec are on the average substantially lower
than for the remaining provinces, with the exception of Manitoba. This
observation implies that employers in the former group of provinces may be
slower in hiring additional workers as a result of incremental wage costs.
Employers in high-wage regions are hurt much less by minimum wage provisions
and this may be reflected in a greater willingness to expand employment in
response to economic conditions. The above may be a partial explanation
for the observed growth differentials. Other variables, such as regional
variations in economic activity, are of course of importance too.

Table 18 presents the same information as Table 16, except that it
analyses provincial instead of industrial data. The coefficient of relative

## TABLE 17

Total Employment in FJI, by Province, May 1965 and
May 1966, for the 1,511 firms in the matched sample

| Province | Total Employment in 1965 | Total Employment in 1966 | Change in Employment between 1965-1966 | Col. 3 as % of Col. 1 |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Canada | 299,019 | 308,812 | 9,793 | 3.28 |
| - Newfoundland | 6,700 | 6,724 | 24 | .36 |
| - Prince Edward Island | 850 | 869 | 19 | 2.24 |
| - Nova Scotia | 8,502 | 8,724 | 222 | 2.61 |
| - New Brunswick | 8,152 | 8,209 | 57 | .70 |
| - Quebec | 91,939 | 94,246 | 2,307 | 2.51 |
| - Ontario | 116,968 | 121,133 | 4,165 | 3.56 |
| - Manitoba | 21,583 | 21,606 | 23 | .11 |
| - Saskatchewan | 9,662 | 10,008 | 346 | 3.58 |
| - Alberta | 14,836 | 15,293 | 457 | 5.78 |
| - British Columbia | 19,827 | 21,600 | 1,773 | 8.94 |

Note:   The above employment data refer to total employment of the 1,511
firms constituting our matched sample.  The firms are those who
returned the questionnaires mailed to them by the Canada
Department of Labour in both 1965 and 1966.  The employment data
show total employment, i.e. over the whole range of hourly
earnings.

## TABLE 18

Measures of changes in the wage distribution; direct costs
due to Federal Minimum Wage implementation; by Province, between May 1965
and May 1966

| Province | Available range in percentiles | Changes in absolute wage distribution, in cents | Coefficient of relative narrowing | Direct incremental labour costs due to FMW, in $ |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Canada | 10 - 70 | - 6 | — | 7,134,000 |
| - Newfoundland | 10 - 80 | - 2 | -.032 | 293,000 |
| - Prince Edward Island | 10 - 90 | -20 | -.077 | 65,000 |
| - Nova Scotia | 10 - 80 | - 5 | -.068 | 568,000 |
| - New Brunswick | 10 - 90 | - 7 | -.045 | 325,000 |
| - Quebec | 10 - 60 | - 3 | -.030 | 2,030,000 |
| - Ontario | 10 - 70 | - 4 | -.031 | 2,065,000 |
| - Manitoba | 10 - 70 | - 2 | -.027 | 496,000 |
| - Saskatchewan | 10 - 80 | 2 | -.026 | 388,000 |
| - Alberta | 10 - 70 | -10 | -.041 | 556,000 |
| - British Columbia | 10 - 60 | 5 | -.015 | 348,000 |

Note:  For explanations of headings see footnotes for Table 16.

narrowing is negative in all provinces, suggesting that the wage distribution has narrowed over the 10 to 50 percentile range considered. The magnitude of the coefficient is larger for the Atlantic Provinces on the whole than for the remaining provinces. Newfoundland is an exception. This may be due to the fact that relatively few firms from that province were included among the 1,511 firms and the ones that did enter into the sample were from relatively high-wage industries.

(b) Hypothesis II: There is a high correlation between the narrowing of the wage distribution in an industry or province or area and the percentage of workers below the minimum in these respective categories.

In short, the above amounts to a determination of the relationship between the 1) coefficients of relative narrowing (shown in columns 3, Tables 16 and 18) and 2) the percentage of workers earning up to $1.25 an hour, both on an industry and on a regional basis. Since the coefficients of relative narrowing had already been found it remained to determine what percentage of workers earned up to $1.25 an hour.

By Industry: For reasons discussed in the previous section it was found that coefficients of relative narrowing could be determined only for 6 out of 17 industries. Hence, the following discussion is restricted to these 6 industries. Table 19 shows the number and the percentage of workers earning up to $1.25 an hour by industry and the coefficients of relative narrowing (from Table 16).

## TABLE 19

Percentage of workers earning less than $1.25/hr. and
coefficients of relative narrowing, by Industry

| Industry | Number of workers earning up to $1.25 | Number of workers earning up to $1.25/hr. as % of industry employment in May 1965 | Coefficient of relative narrowing |
|---|---|---|---|
| | (1) | (2) | (3) |
| Road Transportation | 627 | 3.56 | -.021 |
| Water         " | 423 | 4.80 | -.016 |
| Telephone Communications | 2,491 | 6.76 | -.058 |
| Grain elevators & Grain milling | 1,500 | 9.45 | -.019 |
| Banking | 14,418 | 18.70 | -.031 |
| Hotels | 719 | 56.44 | -.140 |

The relationship between columns 2 and 3 yields a coefficient of correlation
of -.92, or an $r^2$ of about .85.

By Province:  Table 20 shows (1) the number of workers earning up to $1.25
an hour in each province, (2) the percentage of workers in total FJI employ-
ment earning up to $1.25 an hour and (3) the coefficients  of  relative
narrowing.

So far it has been established that there exists a fairly high corre-
lation between the narrowing of the wage distribution both with respect to
industries and to provinces.  In the former instance $r^2 = .85$ and  in  the
latter .77.  Although there may be disagreement as to the meaning of a 'high'
$r^2$ we feel that our two $r^2$'s do establish a notable relationship.  At  the
same time we are aware of variables other than the minimum wage which were
interacting with one another, particularly changes in price levels and  the
favorable employment market at that time.

High vs. low-wage areas:  As to the determination of high-wage and low-wage
areas we first had to decide on a method to find such areas  since  the
Canada Department of Labour does not classify regions within provinces as
to high-wage or low-wage.  We decided to select the 58 cities  listed  in
Wage Rates, Salaries, and Hours of Labour published by the Canada Department
of Labour and chose 9 occupations which we felt offered substantial employ-
ment opportunities within federal jurisdiction industries.  Then we arranged
the 58 cities for each of the 9 occupations in descending order.   We
selected the highest 13 cities for each of the 9 occupations as representing
our high-wage area.  Similarly we used the lowest 13 as constituting  our
low-wage sample.  The 32 cities in the middle range were dropped in  order
to obtain a more clear cut separation between high and low-wage areas.

## TABLE 20

### Percentage of workers earning less than $1.25/hr. and coefficients of relative narrowing, by Province

| Province | Number of workers earning up to $1.25/hr. | Number of workers earning up to $1.25/hr as % of total FJI employment in province, in May 1965 | Coefficient of relative narrowing |
|---|---|---|---|
| | (1) | (2) | (3) |
| Newfoundland | 618 | 9.22 | -.032 |
| Prince Edward Island | 167 | 19.65 | -.077 |
| Nova Scotia | 1,457 | 17.14 | -.068 |
| New Brunswick | 873 | 10.71 | -.045 |
| Quebec | 6,039 | 6.57 | -.030 |
| Ontario | 7,176 | 6.14 | -.031 |
| Manitoba | 1,454 | 6.74 | -.027 |
| Saskatchewan | 1,174 | 12.15 | -.026 |
| Alberta | 1,843 | 12.42 | -.041 |
| British Columbia | 1,596 | 8.05 | -.015 |

The relationship between columns 2 and 3 yields a coefficient of correlation of -.88, or an $r^2$ of about .77.

Thereupon we added total employment in federal jurisdiction industries
in the two groups of cities constituting the high-wage and low-wage areas
respectively, and obtained the following results:

| | Total FJI employment May, 1965 | Total FJI employment May, 1966 | Change between 1965-66 | Change expressed in % of 1965 empl. | Available range in deciles | Absolute distri-bution, in cents |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| High-wage | 21,700 | 21,934 | 234 | 1.07 | 10-50 | 2 |
| Low-wage | 4,064 | 3,657 | -407 | -10.02 | 10-60 | -10 |

The above data were obtained by adding up total employment of the
firms from our original group of 1,511 firms who were located in the 26
cities constituting our two groups.

The table clearly shows that major differences between the high-wage
and low-wage labor markets exist. In the former employment rose by about
1% while it declined in the latter by some 10%. Furthermore, the absolute
distribution (which, it will be remembered, refers to the available range,
column 5) rose by 2 cents over the 10-50 range for high-wage areas, and
declined by 10 cents for the low-wage areas. In conclusion, the above
suggests that minimum wage legislation tends to have a stronger impact on
the labor market in low-wage areas than in higher-wage areas.

(c) Hypothesis III: Male-female and office-nonoffice differentials will
probably narrow.

The data used here are the same as for the preceding two hypo-
thesis, i.e. the 1,511 firms which constitute our matched sample. The

approach used to determine whether narrowing in effect occurred was to
compare earnings of women and men for various selected percentiles for both
1965 and 1966.

Male-Female Differential: Since males are generally known to earn more on
the average than females the ratio of $\left[\dfrac{\text{Earnings of females}}{\text{Earnings of males}}\right]$ will be less
than 1 for earnings of females of any percentile compared with earnings of
males of any percentile no lower than the female percentile studied. In
other words if the 20%ile of females is compared with, say, the 20%ile of
men the ratio should be less than one. Similar ratios result if various
other %iles are used. In Tables 21 and 22 (below) the ratio will always be
less than one.

TABLE 21

Earnings ratios for Males (M) and Females (F) for
various percentiles, in 1965 and 1966

| 1965 | | | | | 1966 | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | F 10 | F 50 | M 10 | M 50 | | F 10 | F 50 | M 10 | M 50 |
| F : 10 | 1 | .718 | .713 | .505 | F : 10 | 1 | .770 | .765 | .557 |
| F : 50 | | 1 | .994 | .703 | F : 50 | | 1 | .994 | .724 |
| M : 10 | | | 1 | .707 | M : 10 | | | 1 | .728 |
| M : 50 | | | | 1 | M : 50 | | | | 1 |

Note: F = female; M = male; F : 10 refers to the 10th%ile of females
etc.; .718 in 1965 for example states that earnings of the
10th%ile of females were 71.8% of the earnings of the 50th%ile
of females, etc.

The data in Table 21 clearly show that, in general, women were able to improve their respective positions compared to men. The magnitude of such improvements ranged from about 2 percentage points to more than 5 percentage points. For example, the 10th%ile of females earned only about .505 as much in 1965 compared to the 50th%ile of men (or about half). By 1966 the fraction had risen to .557 amounting to a gain of 5.2 percentage points. The above narrowing in favor of women is of course only relevant if it is the result of a genuine improvement. It is possible for the ratio to rise without bringing about a real economic improvement of the workers making up the numerator of the fraction. This may be achieved by discharging some of the lowest low-wage earners, who may be individuals whose marginal cost now exceeds their marginal product.

In conclusion, Table 21 suggests that women were able to improve their earning position vis-a-vis men, and that low-wage men (the 10th%ile) also profited compared to the 50th%ile of men (from .707 in 1965 to .728 in 1966).

Office - Nonoffice Differential: In essence this comparison is merely a slight variation of the above female-male comparison of earnings. It is well known that office employment is overwhelmingly female in Canadian federal jurisdiction industries, notably Telephone communications, and Banking. We have used the ratio of earnings in office employment to earnings in non-office employment to measure earning differentials between these two groups. Table 22 presents our computations.

## TABLE 22

Earnings ratios for Office (O) and Non-Office (NO) workers
for various percentiles, in 1965 and 1966.

| | 1965 | | | | | 1966 | | | |
|---|---|---|---|---|---|---|---|---|---|
| | O 10 | O 50 | NO 10 | NO 50 | | O 10 | O 50 | NO 10 | NO 50 |
| O : 10 | 1 | .620 | .838 | .605 | O : 10 | 1 | .672 | .884 | .646 |
| O : 50 | | 1 | 1.351 | .976 | O : 50 | | 1 | 1.316 | .962 |
| NO: 10 | | | 1 | .722 | NO: 10 | | | 1 | .731 |
| NO: 50 | | | | 1 | NO: 50 | | | | 1 |

Note: O = office; NO = Non-office workers; O:10 refers to the 10th%ile
of office workers etc.; .838 in 1965 for example states that
earnings of the 10th%ile of office workers were 83.8% of the
earnings of the 10th%ile of non-office workers, etc.

This table on the whole shows that office workers were able to improve their

earning position compared to non-office workers. Similarly, the lowest

10th%ile of office workers gained compared to the 50th%ile of office workers.

## REFERENCES

1/  Economic Council of Canada, <u>Fourth Annual Review</u>, Sept. 1967, pp. 11-12.

2/  <u>Ibid</u>., p. 12.

3/  David E. Kaun, "<u>Economics of the Minimum Wage: The effects of the Fair Labor Standards Acts, 1945-1960</u>," unpublished PH.D. Thesis, Stanford University Press, 1964.

# CHAPTER V

## CONCLUDING REMARKS

Government intervention in the wage-setting process has provoked more controversy than has either regulation of working conditions or hours. The setting of minimum wages has a money dimension that is easily recognizable. Thus, an increase in wages is readily perceived in cost terms, and wage changes have important economic implications because of their effects on employment, costs, prices, and productivity.

In the broadest sense, the basis for setting minimum wages rests upon the belief that the market mechanism has malfunctioned. This malfunctioning may occur in two ways which may or may not be corrected. First, the market may not operate in such a way as to provide a 'subsistence wage' for those who supply labor services. This type of market failure has important economic and ethical implications. Economic institutions are in some sense not operating optimally since social welfare, however measured, is not being maximized. The ethical implication is most usually stated in terms of introducing wage-raising legislation to eliminate poverty. Second, the employer, intentionally or otherwise, may deliberately exploit the worker by paying him less than 'his due'. Minimum wage legislation may, therefore, have as its motive the reduction of employer control in the labor market.

Economic analysis of minimum wages may be subdivided into three facets: first, arguments against wage-setting; second, arguments for wage-setting; and third, empirical studies of the impact of minimum wages. Opposing views about the employment effects of a minimum wage are usually derived from some framework of partial equilibrium theory but are based on different models of the firm. The competitive model of the firm suggests that an imposed wage increase, other things being held constant, will result in a reduction of employment; and the higher the wage increase, the larger the decline in employment. Alternative models, such as one with discontinuities in the demand and cost functions, imply that 'moderate' wage increases will lead to no decrease in employment; it may even result in an increase in the short run. However, there are no reasonably accurate methods to determine demand and supply schedules of firms in non-competitive models, and, hence, the implications of such models are uncertain. In both the competitive and non-competitive models mentioned above the technique that has been used by economists to study minimum wage issues is that of marginal analysis. Some economists feel that marginalism is suspect for both pecuniary and non-pecuniary reasons. The main objection is that employers react to increased wages other than by decreasing employment. Therefore, the use of marginal analysis in the study of minimum wage issues is suspect and should not be used in assessing the impact of government intervention in substandard wage conditions.

Empirical studies on the impact of minimum wages have yielded diverse results, as would be expected. The effects of increased wages on costs, output prices, employment, and the wage structure are dependent upon, among other things, the type of firm or industry studied, the geographical location, and the general level of economic activity. It follows that the general conclusions that can be reached are very diverse.

The controversy between the opponents and proponents of the statutory minimum wage rages on with many of the arguments used today being identical with those of fifty years ago. The main difficulty with most studies, including this one, is the problem of segregating the effects of minimum wages on economic institutions. Changes in prices, wages, employment, and output are the result not only of changes in wage laws, but also of the interaction of shifting consumer tastes, management investment decisions, the pattern of government taxation, spending, and countless other influences. None of these forces come to a halt when a minimum wage law is enacted.

Unfortunately, in this study like the previous ones, we have not been able to hold other things constant while analyzing the impact of minimum wages and, therefore, the results presented here should be interpreted with great care.

It was pointed out at the beginning of chapter IV, that the Canadian economy was experiencing a 'Great Expansion', to use the words of the Economic Council of Canada, which had its beginning in 1961. Unemployment, both in terms of the number of workers out of work and in percentages, had reached a low level by mid-1965, the time of the federal minimum wage enactment. The buoyant state of the economy gradually brought about an increasing rate of price increases which would moderate and partially wipe out the impact of the minimum wage, particularly on low-wage employers.

As shown in section 4.41 Federal Jurisdiction Industries employment rose by about $2\frac{1}{2}$% between May 1965 and May 1966 suggesting that the implementation of the federal minimum wage (FMW) (which covered only Federal Jurisdiction Industries - FJI) had no noticeable impact on employers' employment decisions. In subsequent subsections it was shown that the

federal minimum wage resulted in a remarkable increase in the percentage of
workers earning slightly more than $1.25, particularly in industries believed
to be low-wage such as Hotels. The increase in these percentages between
1965 and 1966 may be viewed as an approximation of the percentage of work-
ers who were directly helped by the federal minimum wage, and hence who
accounted for the direct incremental labour costs.

As to Hypothesis I it was shown by using the coefficient of relative
narrowing that the wage distribution for the six industries which could be
analyzed had narrowed. The same is true for provinces where it will be
noted that the coefficients vary remarkably in magnitude. Thus for British
Columbia the coefficient was only -.015 while for Prince Edward Island it
was -.077, implying that the distribution had narrowed more in the latter
province than in the former.

In Hypothesis II, where it was attempted to determine the relationship
between the coefficient of relative narrowing and the percentage of workers
below $1.25, it was found that a notable relationship exists between the two
sets of data, both on an industry and province basis. The analysis of low-
wage vs. high-wage cities showed important differences in the impact of the
federal minimum wage with low-wage cities experiencing declines in employ-
ment and high-wage cities posting sizeable gains.

As to male-female and office-nonoffice differentials it was pointed
out that female workers on the whole improved their earning position vis-a-
vis males and the same applied to office workers compared to non-office
workers.

To sum up, although the recently enacted minimum wage law apparently

has not caused serious unemployment throughout the economy, it has caused
some unemployment in industries under Federal Jurisdiction and provinces.
This law also has had the effect of narrowing male-female, office-non-office
and geographical wage differentials. The compliance with the law was very
good in almost all cases and the cost factor did not seem to have much
effect. The actual effects of the law, however, on employment, wage dif-
ferentials, and costs has varied from situation to situation.

Finally, since this is the first Canadian study of this kind, it is
hoped that it would not only stimulate further research on this subject but
would also provide a basis for generating suitable statistics by government
and private organizations, which would allow for testing of many of the
hypothesis summarized in this study but which could not be empirically
verified.

# APPENDIX

## EFFETS DU SALAIRE MINIMUM DE $1.25 PREVU
## PAR LE CODE CANADIEN DU TRAVAIL (NORMES)

### RESUME

Comme l'avait déterminé l'Equipe spécialisée en relations de travail, le but de l'étude était 1) de rédiger, dans l'ordre chronologique, une revue et un résumé des ouvrages juridiques, théoriques et empiriques qui traitent de la controverse soulevée par le salaire minimum; 2) d'entreprendre une analyse empirique des données canadiennes accessibles dans l'espoir d'éclairer la question au moyen de renseignements d'ordre quantitatif sur les effets possibles de la nouvelle loi du salaire minimum de $1.25 prévu par le Code canadien du travail (Normes), sur des variables telles que l'emploi, les salaires et les coûts; et 3) de présenter la matière sous une forme qui puisse servir de texte de référence à un profane travaillant pour un syndicat, une entreprise ou un gouvernement. L'étude s'efforce de répondre aux objectifs assignés, dans la mesure où l'ont permis les limites de temps imposées, la nature des données disponibles et le type des industries visées par le Code canadien du travail.

L'intervention du gouvernement dans l'établissement du taux des salaires a soulevé une controverse plus vive que n'importe quelle autre mesure de réglementation des conditions ou des horaires de travail. La fixation d'un salaire minimum revêt un aspect économique facile à détecter. Une augmentation

des salaires est aussitôt ressentie en termes de coûts et entraîne des con-
séquences économiques considérables en raison de ses effets sur l'emploi,
les coûts, les prix et la productivité.

En général, on établit un salaire minimum quand on croit que les méca-
nismes du marché ont mal fonctionné. Ce mauvais fonctionnement peut revêtir
deux formes qui peuvent être ou ne pas être redressées. Dans le premier
cas, l'offre et la demande ne jouent pas de manière à donner un "salaire
minimum vital" à ceux qui fournissent la main-d'oeuvre. Une telle défectuo-
sité a des retentissements économiques et moraux importants. Les institu-
tions économiques n'ont pas dans un certain sens un fonctionnement optimum
puisque le bien-être social, quelle que soit la façon dont on l'évalue,
n'est pas maximisé. Quant aux répercussions morales, elles se traduisent
généralement par la mise en place d'une législation de hausse des salaires
pour supprimer la pauvreté. Dans le second cas, l'employeur peut, dans un
but précis ou non, exploiter délibérément le travailleur en le payant moins
que ce à quoi il a "droit". Par conséquent, la législation du salaire mini-
mum peut être motivée par le désir de réduire l'influence de l'employeur sur
le marché du travail.

L'analyse économique des salaires minimums peut se diviser en trois
parties: premièrement, les arguments contre l'établissement de telles nor-
mes; deuxièmement, les arguments en faveur de celles-ci; troisièmement,
l'étude empirique des répercussions de cette mesure. Les divergences de vue
sur les répercussions d'un salaire minimum sur l'emploi proviennent générale-
ment d'une structure quelconque de la théorie de l'équilibre partiel, mais
elles sont fondées sur les différents modèles de l'entreprise. Le modèle
compétitif suppose qu'un accroissement obligatoire des salaires engendre,

les autres éléments restant constants, une réduction des emplois, et que
plus les salaires augmentent, plus le nombre d'emplois diminue. D'autres
modèles, comme celui où la demande et les coûts ne sont pas réguliers, sup-
posent qu'un accroissement "modéré" des salaires ne conduit nullement à une
diminution des emplois; il peut même, à court terme, en accroître le nombre.
Il n'existe cependant aucune méthode véritablement précise de calcul des
prévisions d'offre et de demande dans les modèles non compétitifs, ce qui
rend incertaines les conclusions qu'on en tire. Dans les deux types de
modèles mentionnés ci-dessus, la méthode employée par les économistes pour
étudier les problèmes du salaire minimum est celle de l'analyse marginale.
Certains économistes estiment que le marginalisme est sujet à caution pour
des raisons financières et autres. Leur principale objection est que les
employeurs réagissent à la hausse des salaires autrement qu'en diminuant
l'emploi. Par conséquent, la méthode d'analyse marginale des conséquences
du salaire minimum est douteuse et ne doit pas être employée dans l'évalua-
tion de l'impact de l'intervention gouvernementale dans le domaine des con-
ditions de salaire inférieures à la norme.

Les études empiriques sur l'impact du salaire minimum ont donné divers
résultats, comme l'on pouvait s'y attendre. Les conséquences de l'accrois-
sement des salaires sur les coûts, les prix de vente, l'emploi et la struc-
ture des salaires dépendent, entre autres choses, du genre d'entreprise ou
d'industrie concernée, de la situation géographique et du niveau général de
l'activité économique. Il s'ensuit que les conclusions d'ensemble auxquelles
on peut aboutir sont très variées.

Dans la controverse qui oppose adversaires et partisans d'un salaire
minimum légal on reconnaît un bon nombre d'arguments qui étaient déjà

avancés il y a cinquante ans. La principale difficulté rencontrée dans la
plupart des études, y compris celle-ci, consiste à cerner les effets du
salaire minimum sur les institutions économiques. Les changements dans les
prix, les salaires, l'emploi et la production proviennent non seulement des
nouvelles lois sur les salaires, mais également de l'interaction de l'évolu-
tion des goûts du consommateur, des décisions de la direction des entreprises
relatives aux investissements, du régime d'imposition adopté par l'Etat, des
dépenses et d'une multitude d'autres facteurs. Aucune de ces variables n'est
statique lorsqu'une loi sur le salaire minimum entre en vigueur.

Malheureusement, nous n'avons pu, dans cette étude, comme dans les pré-
cédentes, maintenir constants tous les autres facteurs dans notre analyse
de l'impact du salaire minimum, et c'est pourquoi les résultats obtenus ici
doivent être interprétés avec la plus grande prudence.

Toutes les données qui ont servi à l'étude sont des statistiques offi-
cielles fournies par le ministère canadien de la Main-d'oeuvre ou par le
Bureau fédéral de la statistique. Or ces données laissent beaucoup à dési-
rer. Par exemple, les réponses aux deux études spéciales sur les salaires
menées en 1965 et en 1966 par le ministère canadien de la Main-d'oeuvre
étaient facultatives. Ainsi, sur les 4,573 questionnaires envoyés en 1965
à un nombre égal de sociétés, 54 p. 100 seulement furent retournés. Le même
cas se reproduisit en 1966. Etant donné que nous voulions analyser la réac-
tion des sociétés à l'application de la loi sur le salaire minimum, nous
avons décidé de ne prendre en considération que celles qui avaient répondu
aux deux questionnaires de 1965 et de 1966, soit seulement 1,511 sociétés.
Il apparait donc que le grand nombre de questionnaires rejetés et de sociétés
qui n'ont pas fourni de réponse ont constitué des éléments qui ont pu fausser

certaines de nos constatations.  Il faut également tenir compte du fait que
les données que nous avons recueillies ne portaient que sur des individus
dont le salaire horaire n'était pas supérieur à $2.50.  En conséquence, la
répartition des salaires horaires plus élevés que $2.50 n'a pu être obtenue.

Il faut également remarquer  1) que les chiffres sur la valeur ajoutée
de la plupart des industries visées par la loi sur le salaire minimum n'ont
pu être obtenus et 2) qu'une large proportion des industries que nous avons
étudiées octroyaient des salaires relativement élevés et étaient fortement
syndiquées, alors que nos études précédentes portaient généralement sur des
industries non syndiquées et offrant de bas salaires.  En outre, aucune
étude spéciale n'a été faite sur les sociétés qui ne sont pas touchées par
la loi.  Nous avons pensé à utiliser les "sociétés bénéficiant d'un délai"
comme moyen d'extrapolation pour étudier l'attitude des sociétés non visées,
mais malheureusement nous ne disposions pas de renseignements comparables
sur les sociétés bénéficiant d'un délai.  De toute façon, les société appar-
tenant à la catégorie des sociétés bénéficiant d'un délai étaient peu nom-
breuses et n'auraient peut-être pas apporté beaucoup d'éléments nouveaux à
notre analyse.

Enfin, l'économie canadienne connaissait une "grande expansion" (pour
employer les termes du Conseil économique du Canada) qui avait démarré en
1961.  Le chômage avait atteint vers le milieu de 1965, date de l'entrée en
vigueur de la loi sur le salaire minimum, un niveau très bas, aussi bien en
termes du nombres de travailleurs sans emploi qu'en pourcentage.  L'excellent
état de l'économie amena peu à peu un accroissement de la montée des prix
qui tempéra et élimina en partie les effets du salaire minimum, en parti-
culier pour les employeurs qui payaient de bas salaires.  Etant donné les

problèmes énumérés plus haut, les résultats donnés ci-dessous doivent être

étudiés avec prudence.

L'emploi dans les industries qui relèvent du gouvernement fédéral s'est

élevé d'environ $2\frac{1}{2}$ p. 100 entre mai 1965 et mai 1966, ce qui laisse à suppo-

ser que le salaire minimum n'a pas eu de répercussions notables sur les

décisions des entreprises concernant l'emploi.  Le salaire minimum a provo-

qué un accroissement considérable du pourcentage des travailleurs gagnant

un peu plus que $1.25, en particulier dans les industries supposées à bas

salaires.  Cet accroissement survenu entre 1965 et 1966 peut être considéré

comme le taux approximatif du pourcentage de travailleurs qui ont directe-

ment bénéficié du salaire minimum, et à qui par conséquent il faut imputer

l'augmentation directe des coûts de la main-d'oeuvre.

Les coefficients de diminution relative montrent que la répartition

des salaires que l'on a pu analyser dans six industries—six seulement sur

les dix-sept qui relèvent du gouvernement fédéral ont pu être étudiées,

étant donné les conditions et les hypothèses ci-dessus mentionnées—a dimi-

nué.  Ces six industries sont:  les transports par route et par eau; le

téléphone; les élévateurs à grains et les minoteries; les banques et les

hôtels.  Cela est également vrai pour les provinces où les coefficients

varient considérablement.  Ainsi, le coefficient de la Colombie-Britannique

n'était que de -.015 alors que celui de l'Ile du Prince-Edouard était de

-.077, ce qui signifie que la répartition a davantage diminué dans celle-ci

que dans celle-là.

Les efforts qui ont été faits pour déterminer le rapport existant entre

le coefficient de diminution relative et le pourcentage de travailleurs

gagnant moins de $1.25 ont montré que ce rapport était important entre ces

deux catégories de données, aussi bien sur la base des industries que sur celle des provinces. L'analyse de la situation dans les villes à salaire élevé et dans celles à bas salaire a montré de grandes différences dans l'impact du salaire minimum, les villes à bas salaire enregistrant une diminution des emplois et les villes à salaire élevé affichant des gains appréciables.

En ce qui concerne les différences entre les travailleurs du sexe masculin et ceux du sexe féminin, et celles entre les employés de bureau et les travailleurs manuels, les travailleurs de sexe féminin ont amélioré leurs gains plus que ceux du sexe masculin, et la situation a été la même entre les employés de bureau qui se sont vus plus favoriser que les travailleurs manuels.

Bref, bien que les salaires minimums n'aient apparemment pas provoqué un accroissement grave du chômage dans l'ensemble de l'économie, ils l'ont néanmoins engendré dans une certaine mesure dans les industries qui relèvent du gouvernement fédéral et dans les provinces. Ces lois ont également eu pour effet de réduire les différences entre les travailleurs des deux sexes, entre les employés de bureau et les travailleurs manuels, et les différences géographiques de salaires. Dans la plupart des cas, les sociétés se sont très bien soumises à la loi, et le facteur coût n'a pas semblé avoir beaucoup de conséquences. Les effets véritables de la loi sur l'emploi, les différences de salaires et les coûts ont varié d'un cas à l'autre.

# N O T E S